

AIR CONDITIONING & REFRIGERATION NEWS

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IN THIS ISSUE

For the Notebook

If you're in any phase of the refrigeration service business, we think you'll like "The Service Man's Notebook," a new feature which starts in this issue (page 13). We're going to try to keep all the articles in this series the same size so they will fit in your notebook.

Where the Money Goes

Government spending for defense is a necessary and laudable enterprise, even though all of us may feel occasionally about the outgo somewhat like the colored lady who, reminded that 50% of her sweepstake winnings would go for taxes, replied: "Well, I bet the gub'ment don't have as much fun with its half as I've going to with mine." Defense spending is going to mean more retail business in many parts of the country, and on page 6 you'll find the start of a list of allocations for spending, and in the editorial on page 8 a discussion of the new kind of market that may be created.

Did You Make Too Much Profit?

Speaking of taxes (who ain't?) there is a concise, but chock-full-of-information article about how the new treasury regulations affect the excess profits tax estimates you may have to make. Page 9.

Once It's In—It Stays

Working on the time-proven principle that getting the appliance into the home is at least half of the sales battle, a dealership in Yakima, Wash. has worked out a variation of the home-demonstration technique that has given refrigerator volume some real "oomph." Read about it on page 4.

Lithium Chloride Combination

Perhaps air conditioning hasn't made the strides predicted for it in the residential or commercial fields, but some of its progress in industrial applications has been satisfying and surprising. It is a particular feather in the hat of the air conditioning engineers because they have demonstrated they can meet the most exacting of conditions, as in the job for a plastic products plant where lithium chloride equipment was combined with mechanical refrigeration equipment to achieve the desired result. Described on pages 14 and 15.

Locker Plant Merry-Go-Round

Some of the newer ideas for refrigerated locker plant design are pretty fancy—so much so locker plants may soon have a special appeal for people who like to operate trick gadgets. If you don't know what we mean, take a squint at the article on page 12 which describes the intriguing "Polar Wheel" system for smaller plants.

He Talks To Help Others

If Uncle Sam has any deep, dark secrets he wants to keep we can recommend just the guys to keep them—service managers for some of the companies in this business. But one service manager that isn't afraid to get "on the record" is Paul Reed of Servel's electric refrigeration division. And if a service man will read his suggestions on pages 10 and 11 we'll wager he can save himself a lot of trouble.

Refrigerator Taxes Up \$190,881 In January

WASHINGTON, D. C.—Excise tax collections on mechanical refrigerators increased \$190,881 in January over the corresponding month of last year, according to Bureau of Internal Revenue statistics.

Collections in January of this year amounted to \$531,839.96, as compared with \$340,958 in January, 1940.

Second Texas Food Conference Slated For March 13-14

AUSTIN, Tex. — Second Food Preservation Conference sponsored by the University of Texas will be held in Austin, Tex., Mar. 13 and 14.

Chairman of this series of meetings is Prof. Byron Short, who helped arrange the first Food Preservation Conference at the University of Texas two years ago. This initial meeting, sponsored by The American Society of Refrigerating Engineers, was the source of much practical information which has since proved extremely useful in the rapidly growing frozen foods industry.

The A.S.R.E. Food Conference Committee, of which Dean Willis R. Woolrich of the School of Engineering of the University of Texas is

(Concluded on Page 16, Column 3)

Nema U.S. Sales Top 2 1-2 Millions in '40

DETROIT — World shipments of household electric refrigerators by members of National Electrical Manufacturers Association hit an all-time high of 2,676,435 units in 1940, passing by more than 280,000 the previous record total of 2,394,659 units established in 1937.

December world shipments by Nema companies also set an all-time record for that month of 115,748 units, besting the 1937 record of 113,132 units and going some 22,000 units over the December, 1939 shipments of 92,955 units.

Shipments to distributors and dealers in the U. S. totaled 2,528,566 units in 1940, as compared with 1,819,641 in 1939, but foreign shipments fell off to 85,957 units, compared with a 1939 mark of 108,714.

Emphasis on 6 and 8-cu. ft. refrigerators in the sales programs of manufacturers during 1940 is reflected in the Nema statistics for the year, which reveal greatly in-

(Concluded on Page 2, Column 3)

\$152 Was Average of Philadelphia Sales

PHILADELPHIA — Sales of household electric refrigerators in the Philadelphia trading area during 1940 totaled 64,496 units, an increase of 15% over those for 1939, but the average unit sales price dropped to \$152, as compared with \$172 during the previous year, according to reports of dealers to Electrical Association of Philadelphia.

Best sales month of the year, in point of unit volume, was May, when retailers pushed through 10,232 units. Second high unit month was June, with 9,258 units, although this figure

(Concluded on Page 2, Column 4)

Fogel Field Men Map 1941 Sales Program

PHILADELPHIA — More than 150 commercial refrigeration distributors and salesmen took part in the Fogel Refrigerator Co.'s annual convention here Saturday, in an intensive day's activities which began at the factory early in the morning and ended with festivities at the Broadwood hotel.

High point of the day was an inspection of Fogel's modern new factory, now a building, which will more than double Fogel's present manufacturing facilities.

Banquet speaker was George F. Taubeneck, publisher of AIR CONDITIONING & REFRIGERATION NEWS, who talked on "Commercial Refrigeration and the Defense Program."

3 Westinghouse Models Dropped To Save Metals

MANSFIELD, Ohio — Discontinuation of three models in the Westinghouse refrigerator line and advances in prices ranging from \$5 to \$10 on some other models was announced last Friday by Westinghouse Electric & Mfg. Co. merchandising division.

The announcement stated that the increased prices are due to rising manufacturing costs resulting from the present scarcity of metals and other materials, which necessitate the substitution of higher cost materials and other product changes. Refrigerator manufacturing is being affected principally by scarcity of aluminum, zinc, nickel, and stainless steel, it was said.

To assist in conserving these most essential materials, Westinghouse is discontinuing its two models which require large quantities of aluminum. These are the high humidity units known as Humichest models—the H-9-41 and H-6-41. Also being discontinued is the S-6-41 model. The company plans to restore the Humichest models to the line when possible, it was stated.

Prices on seven models are advanced \$5, and on two models, the M-9-41 and the MP-9-41, the increase is \$10. Prices of two models, the D-7-41 and the B-9-41, remain unchanged. The price increases are effective Feb. 20. The new price schedule, in Zone 2, is as follows:

U-3-41	\$116.95
AS-4-41	116.95
AS-6-41	119.95
B-6-41	144.95
BP-6-41	169.95
D-7-41	179.95
B-9-41	179.95
M-7-41	204.95
DP-7-41	214.95
M-9-41	239.95
MP-9-41	259.95

\$5 Boost for Hotpoint

CHICAGO — F. B. Williams, manager, Hotpoint refrigeration division, has announced that, due to increased manufacturing costs, there has been a \$5 increase in the list price of all Hotpoint refrigerators, effective Feb. 20.

The flat \$5 increase applies to each model in the Hotpoint line.

Kelvinator-Leonard Ups Prices \$5-\$10 On Several Models

DETROIT — A new price structure which includes \$5 increases in the suggested retail prices of five of the eight 1941 Kelvinator electric refrigerator models and four of the seven 1941 Leonard models was announced Feb. 24 by Kelvinator division of Nash-Kelvinator Corp.

An increase of \$10 on one Kelvinator model, the M-8, and one Leonard model, the LH-8, was also announced.

Following are the Kelvinator prices:

SS-6	\$119.75
D-6	129.95
S-6	144.95
R-6	159.95
PS-6	164.95
M-6	179.95
S-8	179.95
M-8	219.95

Leonard prices now are:

LSS-6	\$119.75
LD-6	129.95
LS-6	144.95
LR-6	159.95
LH-6	179.95
LS-8	179.95
LH-8	219.95

Kelvinator and Leonard prices include delivery and installation in the kitchen anywhere east of the Rocky Mountains, plus five-year warranty.

G-E Prices Raised \$5

NEW YORK CITY — Prices on General Electric household electric refrigerators now being quoted show increases of \$5 on all models in the 1941 G-E line.

No Cork Shortage Likely This Year

BALTIMORE — Although cork has been classified by the National Defense Board as one of some 15 "critical materials," inventory on Jan. 1, 1941 was greater than that of Jan. 1 last year, A. L. Faubel, secretary of the Cork Institute of America, told members of the Baltimore-Washington section of the A.S.R.E. at their recent meeting here.

Imports of raw cork during 1940 far exceeded the annual average of

(Concluded on Page 16, Column 5)

Study Cooperative Finance Plan



NEW YORK CITY — Manufacturers and utility executives, guests at a luncheon tendered by Commercial Credit Corp. at the Waldorf-Astoria, heard H. B. Hardwick of Commonwealth & Southern outline the operating program of the "Economy Purchase Plan." This cooperative installment finance arrangement is being sponsored by the Niagara Hudson Power group. Supplementing Mr. Hardwick's statement was an announcement by H. T. McCann of Commercial Credit Corp. emphasizing a further reduction in finance rates.

Seated, left to right, in the picture

are E. J. Fitzgerald, Niagara Hudson Power Corp.; R. S. Bell, Commonwealth & Southern; Mr. Hardwick; C. G. Smith, General Electric Co.; James Morell, Niagara Hudson Power. Standing: Ray Fox, General Motors Acceptance Corp.; J. C. Saur, General Electric Contracts Corp.; D. R. Loring, Commercial Credit Corp.; F. O. Pansing, Frigidaire; John Park, Norge; G. T. Dunklin, Westinghouse; W. H. Crawford, Commercial Credit Corp.; Mr. McCann; F. M. Lynch, Niagara Hudson Power; R. B. Crean, Nema; T. O. McDavid, Commercial Credit Corp.; G. W. Hart, Ebasco Services, Inc.

Frigidaire's Base Price—\$124.75; Drop One Model

DAYTON, Ohio — Prices of Frigidaire 1941 household electric refrigerators now start at \$124.75.

Price increases of \$5 were put into effect late last week on all Frigidaire models except model L-8, on which the price has been increased \$10.

The model (in the line as originally announced) which sold for \$114.75 has been dropped.

Stewart-Warner Ups Prices of 5 Units

INDIANAPOLIS — Price increases of \$5 each on five of the eight models in the Stewart-Warner line of household electric refrigerators have been announced by Charles R. D'Olive, manager of the appliance division.

The \$5 increase applies to models 601 and 801, but not to models 401 and 611 in the standard or conventional style line. In the "Dual-Temp" line the price increase applies to models 671, 861, and 871, but not to model 661.

Distributor Wins Franchise Suit

MADISON, Wis. — The Wisconsin Supreme Court has reversed the decision of the Fond du Lac circuit court in the litigation between T. W. Meiklejohn, Inc., appliance distributor, and Morse Chain Co., Ithaca, N. Y. stoker manufacturer.

Original suit was filed by the stoker manufacturer to collect a small sum on the account of the Meiklejohn company, which had a distributor contract on the line in part of Wisconsin and upper Michigan. Denying liability, the distributor filed a counter claim, charging that the Morse firm had violated its contract by selling through mail-order firms the merchandise on which it supposedly had exclusive rights in the territory.

The lower court ruling had set the distributor's damages at approximately \$7,500, but held that a written

(Concluded on Page 16, Column 1)

Leo J. Brunner Dies At Age of 83

UTICA, N. Y. — Leo J. Brunner, 83, chairman of the board of the Brunner Mfg. Co. of this city, manufacturer of commercial refrigeration machines, died Feb. 22 at his home here.

Mr. Brunner had remained active in the business until he became ill on Jan. 17. His business career had covered a span of 63 years.

Born in Utica, Mr. Brunner began work here in 1873 in the shops of the Delaware, Lackawanna & Western Railroad and learned the trade of blacksmith. In 1882 he became shop foreman. He went to New Haven, Conn., in 1905 as master blacksmith in the shops of the New York, New Haven & Hartford Railroad.

He returned to Utica six years later and became associated with his son, George L. Brunner, in the Brunner Mfg. Co., which was established in 1906. The father became one of the directors and president, and in 1933 became chairman of the board.

Besides his son, he leaves a grandson, George L. Brunner, Jr. of Utica; a brother, Charles F. of Utica; and a sister, Mrs. James Scott of Reno, Nev.

2,676,435 Household Units Sold Philadelphia Dealers Sell 64,496 Refrigerators In 1940 By Nema Firms During 1940 At Average Price of \$152, Drop of \$20 From 1939

The following 16 companies reported sales to the Refrigeration Division of the National Electrical Manufacturers Association (Nema) on household electric refrigerators for the year, 1940:

Apex Electrical Mfg. Co., Crosley Corp., Edison General Electric Appliance Co., Inc., Frigidaire Div. General Motors Corp., Gale Products Div. Outboard Marine & Mfg. Co., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div. Nash-Kelvinator Corp., Landers, Frary & Clark (out as of Feb. 29, 1940), Leonard

Div. Nash-Kelvinator Corp., Norge Div. Borg-Warner Corp., Philco Refrigerator Co. (out as of Mar. 31, 1940), Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Universal Cooler Corp. (no longer manufacturing—out as of Aug. 31, 1940), and Westinghouse Electric & Mfg. Co.

The sales of the reporting companies include units manufactured for the following concerns: Montgomery Ward & Co., Potter Refrigeration Corp., and Sears, Roebuck & Co.

SALES FOR THE YEAR, 1940

	Domestic	Canadian	Other Foreign	Total World
Lacquer (Ext.) Cabinets Complete				
1. Less than 4 cu. ft.	23,529	1,217	6,832	31,578
2. 4 to 4.99 cu. ft.	133,497	13,987	18,921	166,405
3. 5 to 5.99 cu. ft.	128,243	11,815	13,420	153,478
4. 6 to 6.99 cu. ft.	1,900,354	32,604	25,075	1,958,033
5. 7 to 7.99 cu. ft.	31,404	70	375	31,849
6. 8 to 8.99 cu. ft.	181,473	1,429	4,935	187,837
7. 9 to 12.99 cu. ft.	8,313	...	...	8,313
8. 13 cu. ft. and up.	283	...	35	318
9. Total Lacquer	2,407,096	61,122	69,593	2,537,811
Porcelain (Ext.) Cabinets Complete				
10. Less than 5 cu. ft.	5	...	106	111
11. 5 to 5.99 cu. ft.	5,902	251	1,780	7,933
12. 6 to 6.99 cu. ft.	89,264	284	1,917	91,465
13. 7 to 7.99 cu. ft.	356	3	15	374
14. 8 to 8.99 cu. ft.	20,097	24	1,953	22,074
15. 9 to 12.99 cu. ft.	1,994	5	122	2,121
16. 13 cu. ft. and up.	3,288	20	238	3,546
17. Total Porcelain	120,906	587	6,131	127,624
18. Total—Lines 9 and 17	2,528,002	61,709	75,724	2,665,435
19. Separate Systems, 1/4 hp. or less	564†	26	10,230	10,820
20. Separate Household Evaporators	...	177†	3†	180†
21. Total Household Equipment	2,528,566	61,912	85,957	2,676,435
Value Index*	153.0	309.0	71.0	149.0

*Based on weighted sales for 1934, 1935, and 1936. †These totals represent the cumulative sales of separate systems and household evaporators for the first seven months of 1940. Beginning with the month of August, domestic sales of separate systems were reported as complete units while the household evaporators, condensing units, and cabinets were dropped from the report entirely.

December Nema Sales Total 115,748 Units

SALES FOR DECEMBER, 1940

	Domestic	Canadian	Other Foreign	Total World
Lacquer (Ext.) Cabinets Complete				
1. Less than 4 cu. ft.	893	13	340	1,246
2. 4 to 4.99 cu. ft.	6,194	544	1,143	7,881
3. 5 to 5.99 cu. ft.	3,144	668	565	4,377
4. 6 to 6.99 cu. ft.	78,489	1,830	1,952	82,271
5. 7 to 7.99 cu. ft.	4,195	1	157	4,353
6. 8 to 8.99 cu. ft.	9,132	42	603	9,777
7. 9 to 12.99 cu. ft.	541	...	...	541
8. 13 cu. ft. and up.	5	...	10	15
9. Total Lacquer	102,593	3,098	4,770	110,461
Porcelain (Ext.) Cabinets Complete				
10. Less than 5 cu. ft.	...	...	...	...
11. 5 to 5.99 cu. ft.	110	22	136	268
12. 6 to 6.99 cu. ft.	2,957	19	124	3,100
13. 7 to 7.99 cu. ft.	347	...	15	362
14. 8 to 8.99 cu. ft.	835	1†	49	883
15. 9 to 12.99 cu. ft.	122	...	15	137
16. 13 cu. ft. and up.	212	1	13	226
17. Total Porcelain	4,583	41	352	4,976
18. Total—Lines 9 and 17	107,176	3,139	5,122	115,437
19. Separate Systems, 1/4 hp. or less	...	...	311	311
20. Total Household	107,176	3,139	5,433	115,748
Value Index*	110.0	311.0	64.6	108.0

Month	1940 Units Sold	1939 Units Sold	1938 Units Sold	1940% Inc. Or Decrease Over 1939	1940 Retail Value	1939 Retail Value	1940% Inc. Or Decrease Over 1939	1940 Average Price	1939 Average Price
January	4,257	3,118	3,123	+ 36%	\$ 685,501	\$ 549,996	+ 24%	\$161	\$176
February	4,869	4,473	3,797	+ 9%	750,862	802,458	- 7%	154	179
March	6,199	5,804	4,826	+ 7%	930,708	1,029,138	- 10%	150	173
April	7,879	4,826	5,861	+ 63%	1,220,874	837,058	+ 45%	154	177
May	10,232	9,007	4,812	+ 13%	1,564,776	1,522,484	+ 3%	152	169
June	9,258	9,361	3,623	- 2%	1,389,393	1,591,347	- 13%	150	170
July	5,810	5,183	3,237	+ 12%	905,038	874,054	+ 3%	155	168
August	4,875	4,255	3,936	+ 14%	744,877	706,736	+ 5%	152	166
September	3,766	3,449	2,617	+ 7%	554,905	573,009	- 3%	147	166
October	2,807	2,452	1,697	+ 14%	410,111	402,872	+ 2%	146	164
November	2,452	2,058	1,494	+ 19%	371,756	335,627	+ 11%	151	164
December	2,092	1,852	1,368	+ 12%	335,490	322,330	+ 4%	160	174
Total	64,496	55,838	40,391	+ 15%	\$9,864,291	\$9,547,109	+ 3%	\$152	\$172

Sales by Philadelphia Electric Co. Average \$169 During Year

Month	1940 Units Sold	1939 Units Sold	1938 Units Sold	1940% Inc. Or Decrease Over 1939	1940 Retail Value	1939 Retail Value	1940% Inc. Or Decrease Over 1939	1940 Average Price	1939 Average Price
January	104	125	83	- 17%	\$ 18,157	\$ 23,546	- 23%	\$174	\$188
February	537	262	222	+105%	85,109	50,726	+ 67%	158	193
March	608	268	316	+126%	96,575	49,348	+ 95%	158	184
April	1,072	541	458	+98%	183,666	103,460	+ 77%	171	191
May	1,686	1,487	514	+13%	293,297	317,953	- 8%	173	213
June	1,717	1,498	395	+15%	294,826	340,890	- 14%	171	227
July	1,187	808	357	+46%	203,784	186,348	+ 9%	171	230
August	1,055	677	385	+55%	185,258	151,734	+ 22%	175	224
September	592	545	224	+ 8%	101,570	124,280	- 19%	171	228
October	417	169	115	+146%	69,960	35,516	+ 97%	167	210
November	342	90	59	+280%	52,884	15,986	+230%	154	177
December	352	228	95	+54%	54,507	41,988	+ 29%	154	184
Total	9,669	6,698	3,223	+ 44%	\$1,639,593	\$1,441,775	+ 13%	\$169	\$215

Note: Utility sales approximate 15% of total sales.

Report covers sales in Philadelphia, Bucks, Montgomery, Delaware, and Chester counties. Report includes sales of the following makes: Coldspot, Crosley, Frigidaire, Gibson, General Electric, Hotpoint, Kelvinator, Leonard, Norge, Philco, Stewart-Warner, and Westinghouse.

Sales of 6-Foot Units May Is Peak Sales Month in Philadelphia Pass 2-Million Mark

(Concluded from Page 1)

creased sales in these two size brackets over those of the preceding 12 months.

Sales of 6-ft. units (lacquer and porcelain) totaled 2,049,498 units during the year, an increase of 953,385 over those of the preceding year, 1,096,113 units; sales of 8-ft. units of all types amounted to 209,911 units, passing the 1939 total of 121,444 units by 88,467.

In the U. S. alone, sales of 6-ft. units reached a total of 1,989,618 units during the year to surpass the 1939 total of 1,064,967 by 924,651 units; and 8-ft. unit sales in the U. S. amounted to 201,570 units, a gain of 85,812 over the 1939 total of 115,758.

Influence of the 1940 pricing program on unit sales is shown in the comparative statistics for lacquer and porcelain units contained in the Nema tabulation. While sales of lacquer-exterior cabinets jumped to 2,537,811 units, from a 1939 mark of 1,808,744, porcelain cabinet sales fell off to 127,624 from a 1939 total of 144,721.

This difference is even more marked in respect to U. S. sales for the year, which reveal lacquer cabinet shipments of 2,407,096 units against 1,680,632 in 1939, and a drop in porcelain cabinet sales to 120,906 units, from a 1939 total of 136,933 units.

May Is Peak Sales Month in Philadelphia

(Concluded from Page 1)

was a decline of 2% from June, 1939. April, with 7,879 units, ranked third. The high three months accounted for more than 40% of the total year's sales.

Best three months sales period for the power company was in the May-through-July period, when approximately half the company's sales for the year were recorded. June was high month, with 1,717 units, and May was a close second, with 1,686 units. July sales by the utility company amounted to 1,187 units. For five consecutive months—April through August—sales by the power company were above 1,000 units.

Sales by all dealers in the territory likewise tended to be fairly well concentrated into a five-month stretch, between March and July, inclusive. In each of these months, total dealer sales were right at or above the 6,000-unit mark.

Georgia Area 1941 Sales Set at 8,000 Units

ATLANTA—Quotas for 8,000 electric refrigerators and 5,400 electric ranges have been set for domestic salesmen of Georgia Power Co. during 1941. Dollar value for all 1941 appliance sales has been set at \$2,090,000.

The quota for water heaters is set at 2,200 units, with sales of 1,500 washers and 300 ironers also estimated for the year. Atlanta division has quotas of 2,862 refrigerators, 1,391 ranges, 575 water heaters, 770 washers, and 153 ironers.

U.S. Nema Sales Reach 2,528,566-Unit High

States and Territories	Household Low Sides December Cumulative
Alabama	1,124
Arizona	338
Arkansas	593*
California	6,962
Colorado	806
Connecticut	2,380
Delaware	272
District of Columbia	1,198*
Florida	2,747
Georgia	1,544
Idaho	536
Illinois	7,491
Indiana	3,438
Iowa	2,143
Kansas	982
Kentucky	1,997
Louisiana	1,263
Maine	328
Maryland	1,693*
Massachusetts	3,806
Michigan	5,922
Minnesota	3,763
Mississippi	656
Missouri	3,094
Montana	484
Nebraska	942*
Nevada	168*
New Hampshire	347
New Jersey	4,097
New Mexico	253*
New York	11,030
North Carolina	1,482
North Dakota	16*
Ohio	7,164
Oklahoma	1,206*
Oregon	1,374
Pennsylvania	9,120
Rhode Island	710
South Carolina	705
South Dakota	200*
Tennessee	1,757
Texas	3,088
Utah	213
Vermont	185
Virginia	2,161
Washington	2,978
West Virginia	1,033*
Wisconsin	1,668
Wyoming	87*
Total United States	107,176
Canada	3,139
Other Foreign (Incl. U. S. Possessions)	5,433
Total for World	115,748

*Includes sales and credits.

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Who's Who Where

Keppler To Head Sales Of 2 Morris Lines

WASHINGTON, D. C.—J. R. Keppler, for the past several years in charge of Zenith radio activities for the Edgar Morris Sales Co., distributor for Zenith radios and Westinghouse appliances, has been appointed sales manager for the company's Westinghouse and Zenith lines, according to Edgar Morris, president.

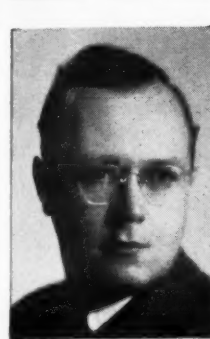
Charles P. Stearns, who has been a member of the sales personnel of the Morris organization, has been appointed sales promotion manager. V. A. Holmes, W. R. Whitfield, and John Carson are the present dealer contact representatives.

Mr. Morris' announcement also stated that the service and parts organization of the firm was being reorganized to render a more efficient customer service.

George H. Kindley, vice president of the Edgar Morris Sales Co., directs all of the firm's appliance activities.

Le Fevre To Manage New General Controls Office

PHILADELPHIA — New factory branch office at 4514 N. Broad St. here has been opened by General Controls Co., Glendale, Calif., with George Le Fevre



in charge. For the past three years Mr. Le Fevre was sales engineer in the company's New York City branch.

The new branch will carry complete stocks of valves and controls for refrigeration, gas and oil heating, and industrial application. Other eastern branches are maintained in New York City and Boston.

Nigro, Williams Join Torrington Research

TORRINGTON, Conn.—Two new members have been added by Torrington Mfg. Co. to its research and testing laboratory staff.

E. Bryan Williams, formerly of St. Louis, has joined the laboratory staff as a research engineer. Mr. Williams had been, since 1928, chief traffic engineer with St. Louis Public Service Co., devoting considerable of his time to research and design.

Philip M. Nigro, until recently a professor of mathematics at Loyola College in Montreal, has also joined Torrington's staff as a research engineer.

Spence Named Distributor For Arctic Trunk Line

DALLAS, Tex.—Lewis G. Spence Co. has been named distributor here for the new Arctic Trunk frozen foods storage cabinet. The Spence company also is distributor for General Electric air conditioning, commercial refrigeration, and heating units, and the Tyler line.

G-E Industrial Dept. Promotes Yates

SCHENECTADY, N. Y.—William C. Yates, since 1937 manager of the control and renewal parts division of General Electric's industrial department, has been appointed an assistant manager of the industrial department. Mr. Yates will continue to have charge of the industrial control and renewal parts division.

Krippens Joins Simon

BALTIMORE — Kermit Krippens has joined the wholesale sales staff of the Baltimore division of Simon Distributing Corp., Hotpoint distributor.

Crosley To Establish S. American Hdqts.



MAURICE L. C. RUTLEDGE

Wesco Moves Groves To Omaha Office

OMAHA, Neb.—W. R. Groves, merchandising supervisor of the Chicago office of Westinghouse Electric Supply Co., has been appointed merchandising supervisor of the company's office here.

Mr. Groves joined Westinghouse in 1930 as manager of the retail store in Philadelphia and four years later was assigned to refrigerator sales for Westinghouse. He was made merchandising supervisor in the Chicago office of the supply company in 1937.

Malarkey's Names Wallace

POTTSVILLE, Pa.—Robert C. Wallace has been appointed sales manager of the appliance department of Malarkey's Store, 206 S. Center St.

CINCINNATI—To direct the handling of the business of Crosley Corp. in South America, Maurice L. C. Rutledge has sailed for Rio de Janeiro, Brazil, to establish a

regional headquarters in the southern continent.

Mr. Rutledge will direct the sales distribution of Crosley radios, refrigerators, ranges, and washers through distributors in all South American countries, and also appoint firms to handle the Crosley line of small automobiles.

He was formerly manager of S. A. Philips de Brazil, subsidiary of the well known Dutch radio and tube manufacturer. Later he was connected with General Motors Overseas Operations of New York City, with Studebaker Corp. of Brazil in Rio de Janeiro, and as regional manager for the Graham-Paige Corp. in Spain, South America, and South Africa. Mr. Rutledge is an accomplished linguist.

Reed Will Head Dirksen Appliance Department

SPRINGFIELD, Ill.—Frank Redmond, Jr. has recently resigned as manager of the appliance and radio department of A. Dirksen & Sons here. Gilbert Reed becomes manager.

Hjelte Heads Davenport Branch of Wesco

DAVENPORT, Iowa—N. A. Hjelte, merchandise supervisor of the Chicago office of Westinghouse Electric Supply Co., has been named new merchandise supervisor for the Davenport office of the company.

Mr. Hjelte became manager of the Westinghouse retail store in Chicago in 1932 after working as a salesman for a local baking company. From 1934 to 1936, Mr. Hjelte was assigned to the apartment house division of the supply company. He was transferred to the commercial refrigeration division in 1933 and worked there for four years.

Denham Organizes Fresno Conditioning Outlet

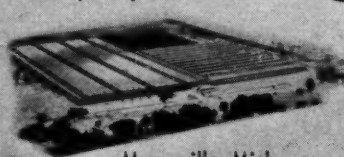
FRESNO, Calif.—R. B. Denham has organized Air Conditioning Equipment & Sales Co. with headquarters at 1922 Tuolumne St. here.

CHRYSLER AIRTEMP

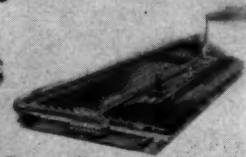
HAS A MONEY-MAKING PROPOSITION FOR DIRECT DEALERS



Airtemp, Dayton, Ohio



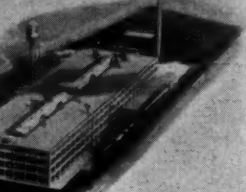
Marysville, Mich.



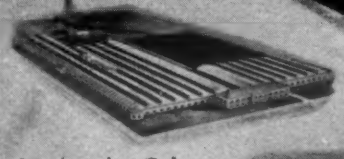
Evansville, Ind.



Dodge Forge, Detroit, Mich.



Kokomo, Ind.



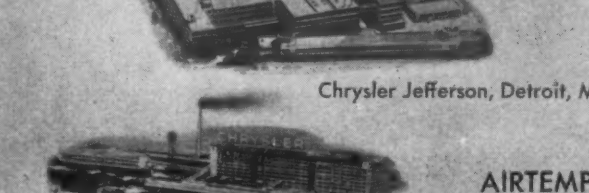
Los Angeles, Cal.



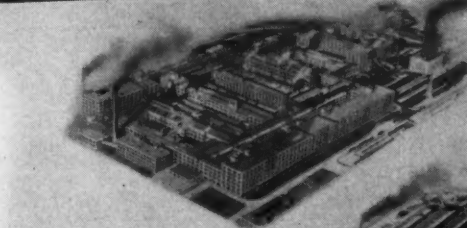
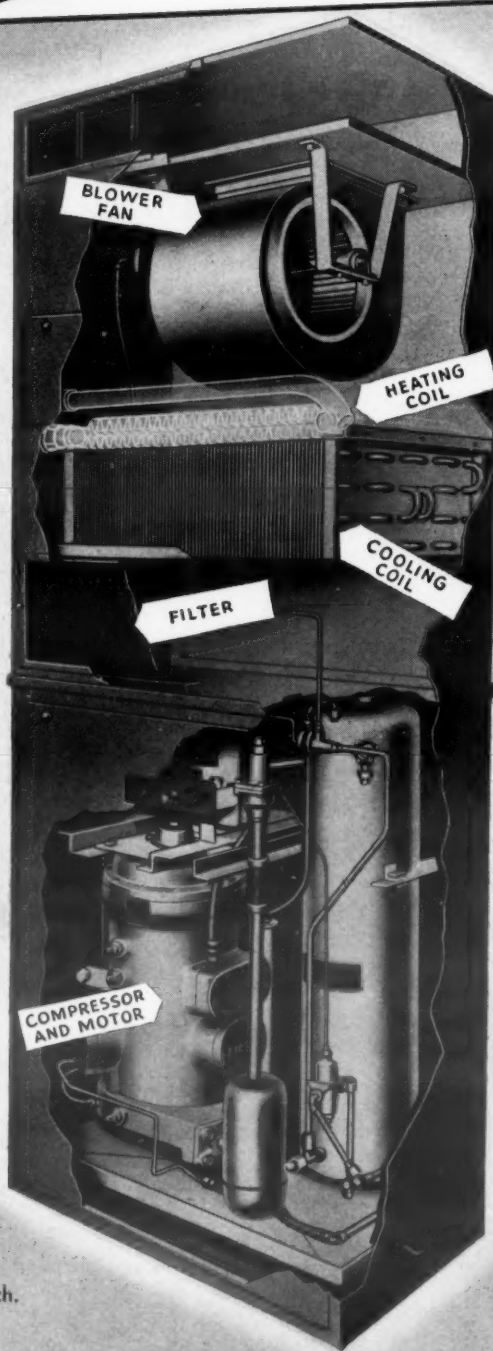
Lynch Road, Detroit, Mich.



Chrysler Jefferson, Detroit, Mich.

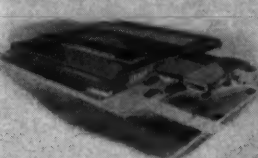


Chrysler Kercheval, Detroit, Mich.



Dodge Main, Detroit, Mich.

Plymouth, Detroit, Mich.



San Leandro, Cal.

New Castle, Ind.



McKinstry Street, Detroit, Mich.

Helena, Ark.



Dodge Truck, Detroit, Mich.

Highland Park, Detroit, Mich.



DeSoto, Detroit, Mich.

AIRTEMP COOLING UNITS ARE ENGINEERED, DESIGNED, BUILT AND WARRANTED BY CHRYSLER CORPORATION

Sealed Radial Compressor an Exclusive Feature—Airtemp was first in the field four years ago with a sealed, self-contained cooling unit. Today thousands of these machines, basically unchanged, are giving satisfactory service in shops, offices and restaurants. Exclusive radial compressor cuts weight and operating costs, saves dealers service expense. The market for packaged cooling units is booming. Send the coupon for Airtemp's money-making Proposition for direct dealers.

CHRYSLER AIRTEMP
AIRTEMP DIVISION OF CHRYSLER CORPORATION, DAYTON, OHIO

Airtemp Division, Chrysler Corporation, Dayton, Ohio

Gentlemen:

Send me your money-making Proposition for direct dealers on your 3 h. p. and 5 h. p. packaged cooling units.

Name _____

Address _____

City _____

State _____

Yakima Furniture Store Finds Success In Old Selling Principle That

ONCE IT'S IN—IT STAYS

YAKIMA, Wash.—Working on the old principle that once any major appliance is installed in a home—even if just for a demonstration or a "look-see"—it rarely comes out, the outside sales force of Thomas & Price Furniture Co. has developed a somewhat different but extremely profitable sales technique.

Simply, this technique is to bring the appliance in question to the prospective buyer. Instead of asking, "Would you like to come to the store to see our latest model refrigerator?" salesmen say to an interested prospect, "Would you mind if I brought one up so you could see it in your own home?" If the prospect agrees to this proposition, chances are 50-50 that the sale will be completed.

STUNT WORKS WELL

At the suggestion of Herm Link, manager of the outside crew, this scheme was first tried about a year ago by two of the store's crack salesmen. Working together with a pick-up truck, they loaded up in the morning with appliances they knew their prospects would be interested in, with sometimes a demonstrator to use in canvassing. At night they checked in again all those appliances which they did not sell.

This stunt worked so well that now nearly every one of the 20-odd salesmen either owns his own pick-up or works with another salesman, sharing expenses. A few work with trailers, or with coupes which they

have converted into light trucks.

Operating in this way, the outside salesmen have accounted for about 50% of the store's \$40,000-a-month volume, three fourths of which is in major appliances. And this in a town of less than 30,000 population.

Chief advantage of the Thomas & Price system over the regular store appointment procedure, according to Mr. Link, is that it creates a stronger desire for the merchandise by letting the prospect see it in his own home.

HOPELESS PROSPECT BUYS

One salesman, for example, while driving home one night too late to turn in the \$150 refrigerator which he had on his truck, passed the home of a prospect whom he had already given up as hopeless. He stopped his truck, rang the man's doorbell, explained that he did not want to leave such an expensive piece of merchandise on his truck overnight, and asked permission to leave it with the prospect. The man consented, and three days later the salesman returned—to write out a sales contract for the refrigerator.

Again, an unexpected sale dropped into one salesman's lap simply because he happened to have on his truck a radio which he had failed to sell earlier in the day. Doing some canvassing, he came across a disgruntled purchaser of a radio which had been taken out on approval. The Thomas & Price salesman brought his left-over radio into the home with

the explanation that he wished to test reception in that locality. When this radio proved far superior to the other set, the prospect bought it and returned the unit with which he was dissatisfied.

Besides increasing sales by leaving the initiative to the salesman instead of to prospects who sometimes "forget" their appointments, these mobile merchandising units also close a good many sales before the prospect has a chance to examine competitive merchandise, Mr. Link points out.

From the store's point of view, it is up to the salesman whether he uses a truck or makes his sales by store appointments. The increased percentage in commission which is paid to the roving salesmen is offset by lowered delivery costs which have been reduced almost to the vanishing point by virtue of the fact that 95% of all deliveries and trade-in returns are made by the salesmen themselves.

Refrigerators Are 'Best Risk' For the Retail Furniture Store

CHICAGO — When household refrigerators moved into the "household necessity" classification, they became the best credit risk in the retail furniture business, in the opinion of Harry Schram, Jr. of Straus & Schram, home furnishings house operating five stores in Chicago.

"Repossessions of electric refrigerators, unlike many other items of household furnishings, are a rarity," Mr. Schram stated. "People will give up a rug, a living room suite, or a dining room table, which conceivably can be called luxuries, but they will usually manage to scrape enough together to hold onto the refrigerator."

SALES INCREASE 70%

For that reason electric refrigerators occupy an important place in the firm's sales program. They have been given special emphasis through a series of model kitchen window displays, floor displays, and newspaper and direct mail advertising. During 1940 this aggressive program brought about a 70% increase in sales over the same period of 1939, according to store officials.

All refrigerators are advertised at "no money down—three years to pay," and practically without exception are sold on this basis. The time payment plan on refrigerator sales is preferred because it keeps purchasers coming into the stores at regular intervals, providing additional sales opportunities on other items.

All five stores carry three makes of electric refrigerators—General Electric, Norge, and Westinghouse. Each store has its appliance department in the basement, where, in addition to a full line of major appliances, related house furnishings are displayed. Displays of kitchen and dinette furniture, kitchen cabinets, and small appliances tie in with a "suggestive selling" plan.

DISPLAY WHOLE LINE

From March through July, a display of the entire refrigeration line is maintained on the first floor of each store. This display space becomes a selling floor for refrigerators during this peak season. When this peak has passed, another item, such as oil burners, moves in. During the entire year, however, one refrigerator is kept on the first floor as a constant reminder to shoppers that the store carries and sells them.

Mr. Schram reports that only 14% of his store's sales were in the bargain class, with the average sale in the \$150 bracket.

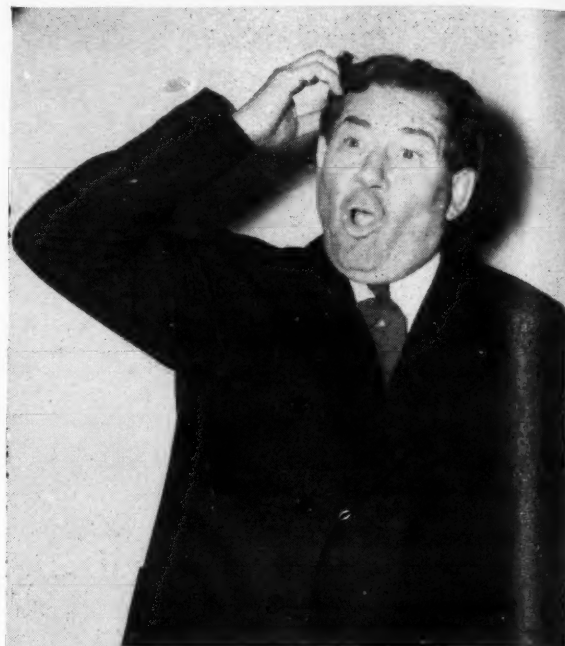
Boggs & Buhl's Takes on Kelvinator Line

PITTSBURGH—Boggs & Buhl's department store has added the Kelvinator refrigerator line, making five lines of refrigerators sold by its first-floor appliance department. N. C. Ley is department manager.

Whidden & Thomas Moves To New Location

JONESBORO, Ark.—Whidden & Thomas Appliance Co. has moved to a new location at 220 S. Main St. The firm is dealer for Hotpoint ranges and refrigerators, Zenith radios, and other appliances.

Sam's Selling Slants



V. E. ("Sam") Vining, merchandising manager for Proctor Electric Co., is the industry's most colorful salesman. This is the twenty-third of a series of Sam's famous "Selling Slants" messages to salesmen. An earlier series was published in the News in 1937.

'GIMME GUY'

Don't be a "Gimme Guy." The selling world has too many of 'em now—especially when the going may be a little tough.

You know what is a "Gimme Guy." He kneels down at night and prays: "Oh Lord, gimme this," and "Oh Lord, gimme that."

The kind of prayers that are answered have a different tune: "Oh Lord, if this is good for me, give me the guts to go get it."

It does little good to raise the hands and cry wildly: "Oh Lord, I have cut my advertising to the bone—gimme a customer; Oh Lord, my prices are so low that I have shaded my quality—gimme a customer; Oh Lord, I have cut down my stock until people say I can't find them or I don't have what they want—please make 'em buy; Oh Lord, I am handling the same models and styles all my competitors are handling—please put the world in uniform."

"Oh Lord, I have cut my salary roll to the point where my sales people have grown listless—give my customers enthusiasm; I have told my buyers to let no manufacturer or jobber make a profit; I have told the world my troubles; I have told my own family it must buy nothing; Oh Lord, I am distraught—I need a customer."

Joseph didn't cry "Gimme"—even after they took the shirt off his back.

Moses didn't ask the Lord to do all the work—he at least smote the rock.

All the world isn't broke—a large share is merely standing back and daring us to show it something it wants to buy.

Much of our troubles come from the "Gimme Guys" copying each other.

SERVEL Silver Fleet



Smooth and silent as a sailboat, Servel's "Silver Fleet" refrigerating machines offer you a standard of operating efficiency that is 3 to 5 years ahead of the field. Ask for the new 72-page catalog. Servel, Inc., Electric Refrigeration and Air Conditioning Division, Evansville, Ind.

COMMERCIAL REFRIGERATING MACHINES

MODERN REFRIGERATION CONTROL

SERVICE

QUALITY

DEPENDABILITY

CUTLER-HAMMER
MOTOR CONTROL

COMMERCIAL
SEMI-COMMERCIAL
REPLACEMENT

CUTLER-HAMMER, INC.
Pioneer Electrical Manufacturers
1362 St. Paul Ave., Milwaukee, Wisconsin

A NEW
Advanced
I-BUTTON
General
Replacement
Unit

The Symbol
of 25 years of
Specialized Motor
Control Manufacture

Refrigeration COPPER TUBING--

"BRIGHT as Gold" inside and out is no accident in our plant. Even bare hands do not touch SUPERIOR tubing in its journey through our large new plant.



ENDS ARE
SEALED

PENN BRASS & COPPER CO., INC.
POWELL AVE., ERIE, PENNA.

M. B. CO. CARTRIDGE TYPE DEHYDRATOR

● The replaceable cartridge for this dehydrator is hermetically sealed in a moisture proof metal container which insures that the dehydrating agent is absolutely dry right up to the moment you are ready to place it in the dehydrator.

Cartridges are furnished with all the popular dehydrating agents and are also stocked with filter and strainer elements.

Dehydrator refills are equipped with our cone screen feature permitting free flow of the refrigerant—restriction and pressure drop cut to a minimum.



Replacement gaskets furnished with each cartridge provide adequate seal.

MUELLER BRASS CO.
PORT HURON, MICHIGAN
ORDER FROM YOUR JOBBER

Cooling Installation Increases Attendance For Calif. Library

COALINGA, Calif.—Attendance at the Coalonga district library has jumped 50% since the installation of air conditioning. The library, in San Joaquin valley where mid-summer temperatures often soar above 100° F., had been losing patronage rapidly and its 30,000 volumes were practically untouched.

Librarian Howard M. Rowe, discovering that it was on scorching afternoons and sultry evenings that attendance showed the sharpest drop, decided to try air conditioning. A 10-ton cooling system was installed.

Many persons who hadn't been near the library for years returned as regular patrons. School students once more used it as a reference library. One reason for the pickup in attendance was the reduction in street noises through the installation of inner doors for insulation purposes.

Preservation of rare books through elimination of the "drying out" encountered previously also has been reported by Librarian Rowe since air conditioning.

A.S.H.V.E. Schedules First West Coast Meeting

SAN FRANCISCO—Moving to the Pacific Coast for the first time in its history, the American Society of Heating & Ventilating Engineers will hold its semi-annual 1941 meeting at the Palace hotel here during the week of June 16.

Fifty-second annual convention of the Heating, Piping & Air Conditioning Contractors National Association also will be held in San Francisco during the week of June 16, at the St. Francis hotel.

Engineers attending either of the meetings will have an opportunity to visit the Pacific Heating & Air Conditioning Exposition, which will be in progress in the Civic auditorium.

Carrier's Old Plant In New Brunswick Sold

NEW BRUNSWICK, N. J.—Sale of the former Carrier Corp. plant here to the Harris-Hub Bed & Spring Co. of Chicago, manufacturer of steel furniture, was recently announced. This unit was one of the five plants of Carrier Corp. vacated when the company moved to Syracuse in 1937.

According to Carrier officials, the only plant remaining unsold is the one at Bridgeport, Conn., the two Newark, N. J. plants and the one at Allentown, Pa. having been sold some time ago.

The Harris-Hub company will employ between 300 and 400 men here in the manufacture of steel beds, springs, furniture, and utility cabinets.

Buffalo City Hospital Plans Conditioning

BUFFALO—Meyer Memorial Hospital, a city-owned institution, is making plans to install air conditioning in all of its operating rooms and in a new chest surgery which is now being completed.

The new surgical tuberculosis unit at the hospital presents a peculiar need for air conditioning. Byclopene, a new type of gas used in tuberculosis surgery, is highly explosive and it is necessary to have a high humidity in the operating room to reduce danger from sparks.

Refrigeration Helpful on Mink Breeding Ranch

PORT WASHINGTON, L. I., N. Y.—Economies in feed bills for the Woodacre Fur Farm, one of the largest mink ranches in New York, were effected through installation of Carrier refrigeration equipment, according to Thomas M. Fraser, owner. Buying horse meat in quantities when prices are low provides savings, and proper "aging" is believed to make it more beneficial.

Sealed, Windowless Operating Rooms Pose Special Hospital Air Conditioning Problem

CINCINNATI—Windowless operating rooms, made possible by the use of complete air conditioning, were incorporated in the design of an addition to the Jewish Hospital here. Sanitary considerations dictated the construction of windowless rooms, which have virtually no air leakage. While hospital operating rooms are usually located on the top floor, these were built in less valuable space in the basement of the building.

Anemostat air diffusers were used to effect the distribution of conditioned air from two separate air conditioning systems.

One system, serving all operating rooms, uses 100% fresh air, which is passed through conventional dry filters and then through an electrostatic precipitator, to remove all dust and dirt. The air is then conditioned in a dewpoint controlled double bank washer to a final temperature of 75° F. with a 62° F. dewpoint, before it is introduced to the operating rooms.

Second system consists of 1½-ton Trane conditioners—one for each operating room. These units handle fluctuations in the internal load and remove excess humidity. The individual conditioners contain cooling coils with water spray, heating coils, humidifiers, eliminators, and fan assemble. Air drawn from the operating rooms through side wall grilles is returned through diffusers located in the operating room ceiling.

Air is exhausted by individual fans which draw the air to a central duct leading to the main exhaust fan located in a penthouse on the building. Special dampers prevent any "back draft" of exhaust air.

Final design conditions in the operating rooms are an 80° F. temperature and a relative humidity of 56%, in accordance with the recommendations of the American College of Surgeons.

The system has been found to be economical in operation, as the individual conditioners do not have to function unless the operating room is in use. Two rooms, however, are held in readiness for emergency operations.

A system of pilot lights in each operating room lets the surgeon and his staff know that the individual conditioners are running. Each room is under the control of individual thermostats and humidistats and an electro-pneumatic switch controls the air supply and exhaust fans.

Rapid air changes—from 12 to 15 per hour—eliminate the explosion hazard and dissipate odors in the conditioned space.

Niagara League Alters Name

BUFFALO—Electric Association of the Niagara Frontier has been adopted as the new name of the Electrical League of the Niagara Frontier, recently incorporated.

Kansas Engineers at Kansas City Meeting



Kansas was well represented at the A.S.H.V.E. winter meeting held last month in Kansas City. Here are W. F. Ryan, Salina; W. L. Morrison, Great Bend; and Harry L. Stevens, Hutchinson, Kansas.

Republic Steel Contracts St. Charles Mfg. Co. Tells For Furnace Cooler Program For 1941

BIRMINGHAM, Ala.—Contract for air conditioning the fourth iron blast furnace in the Birmingham district has just been awarded by Republic Steel Corp. for its No. 2 Thomas furnace.

The first furnace was air conditioned more than a year ago by Woodward Iron Co., which recently awarded a contract to Carrier to condition two more of its iron smelters.

The air conditioning is chiefly to reduce and to control moisture content in the air blast. This effects a saving in fuel and at the same time assures a more uniform product.

ST. CHARLES, Ill.—Beginning its sixth year as a manufacturer of custom-built steel kitchen cabinet equipment, St. Charles Mfg. Co. last month held its first general sales conference, at which merchandising and advertising plans for 1941 were outlined.

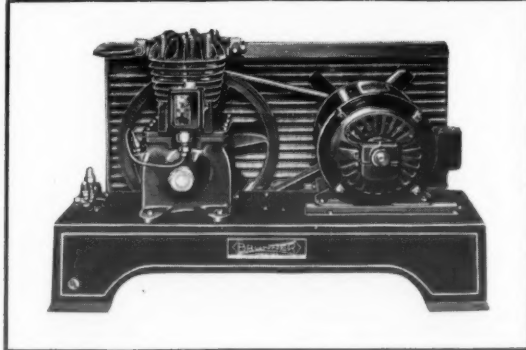
Attending the meeting, in addition to district supervisors, were a number of larger dealers.

Speakers included R. A. MacNeille, president; Philip P. Mosher, sales manager; Arthur T. Lewis, advertising manager; and A. W. Seiler, president, and C. W. Faude, vice president, of Cramer-Krasselt Co.

P's and Q's

OF DEPENDABLE REFRIGERATION

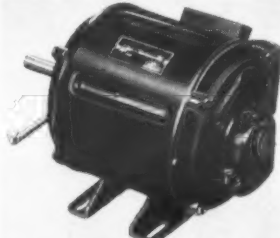
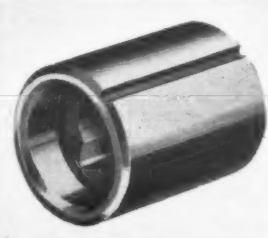
The accelerated trend by manufacturers of refrigerated coolers and display cases to specify Brunner condensing units is of particular significance. It is proof that these modern condensing units have all the characteristics required to provide dependable refrigeration regardless of the application. Improved construction and engineering features of Brunner units assure continued performance with low operating and maintenance cost. In addition, the good will that manufacturers derive from customer-satisfaction through dependable operation is a sales and profit angle worth many dollars. Brunner units carry the Underwriters' Laboratories approval and the U. L. Seal. Available in a full range of capacities from ¼ to 25 tons of refrigeration. Write Brunner Manufacturing Co., Utica, N. Y., U. S. A.



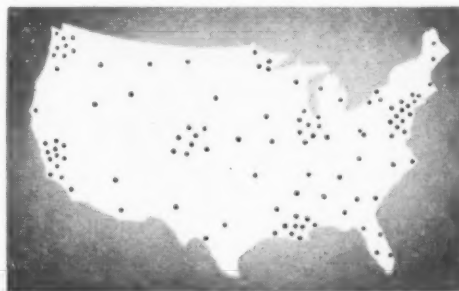
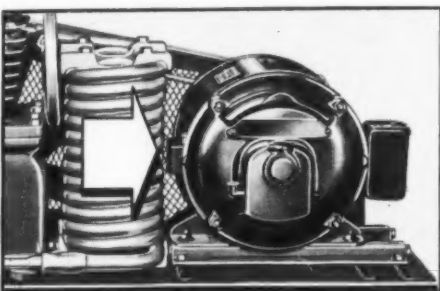
1 TROUBLE-FREE performance at low operating cost is a plus feature built into every Brunner.

2 COMPACT—Brunner condensing units are designed for compactness. They fit into small spaces releasing more room for the display and storage of food products.

3 NO VIBRATION—Brunner units are designed and engineered by refrigeration experts. Smooth, quiet and efficient performance is built in. All moving parts are dynamically balanced for vibrationless, wear resistant service assuring long life and low operating cost.



4 INTERCHANGEABLE—The all-in-one valve assembly, bronze bearings, silent eccentric drive, wear ever shaft, bellow seal assembly, cylinder heads and all other moving parts are precision machined. New parts are perfectly interchangeable with original units permitting important service savings.



5 OVERLOAD PROTECTION... Automatic reset integral overload protection (up to 1 h.p. incl.) prevents motor from burning out. Continuous refrigeration is assured, thus preventing spoilage.

6 EXPERT FIELD engineers are stationed in all parts of the United States. They are available for consultation in the solution of any refrigeration problem. Their practical experience will prove invaluable.

Manufacturer of refrigerated cases reports...

"It will be of interest to you to know that we have no occasion to be called to service any Brunner unit installed by us. Our customers are more than satisfied with the dependable, trouble-free performance of their Brunner equipment and particularly appreciate the low operating costs. Your engineering cooperation has also been most helpful."

Your business, too, can benefit with Brunner dependability and engineering service. Write us for the "reason why" of Brunner popularity.

BRUNNER
REFRIGERATION

SEND for the "Inside story". Brunner superiority illustrated point by point.

GET THESE
MONEY
SAVING
FACTS

Defense Contracts

Latest Data on Allocation of All Major Defense Contracts

The listings on this page, compiled by Outdoor Advertising, Inc. from U. S. Government reports and from local sources, and quoted by Advertising & Selling, present as complete a picture as possible of the allocation of defense expenditures with a product-place-and-dollar breakdown. (Balance of the listings will be published in next week's issue. Figures represent main contracts placed be-

tween June 13 and Dec. 30, 1940.

This data is published because it gives manufacturers, distributors, and dealers an idea of the added market possibilities that the defense program may hold for them in their particular territory. One way to use the figures is to divide them by the local population or number of families, to get a per capita or per family capita picture of the defense spending.

ALABAMA	
Anniston, ordnance	\$ 932,228
Fort McClellan, Anniston, construction	3,335,977
Birmingham, ordnance	9,450,253
Chickasaw, destroyers, housing	31,500,000
Florence, underwear	670,885
Wilson Dam, Florence, construction	3,000,000
Gadsden, construction	1,138,000
Mobile, construction, air depot	2,784,508
Montgomery, barracks	448,808
Maxwell Field, Montgomery, housing	1,450,000
Muscle Shoals, TVA construction	6,500,000
Selma, barracks, construction, housing	1,482,917
Alabama state total	\$62,693,576
ARIZONA	
Fort Huachuca, Bisbee, hospital	\$1,365,346
Pima, construction	784,151
Arizona state total	\$2,149,497
ARKANSAS	
Little Rock, airport	\$ 460,249
Camp Robinson, Little Rock, construction	4,615,920
Arkansas state total	\$5,076,169
CALIFORNIA	
Alameda, naval air station, housing	\$ 9,828,274
Alhambra, lights	1,655,180
Benicia, arsenal	172,000
Burbank, airplanes, parts	46,391,928
Downey, airplanes, parts	41,606,005
El Segundo, loan	114,507
Fresno, construction	508,480
Glendale, airplane instruction	117,600
Hunters Point, construction	899,400

Inglewood, airplanes	122,233,853
Long Beach, construction	12,517,700
Los Angeles, ordnance, ships, destroyers	73,472,330
Mare Island Navy Yard, submarine	91,928,509
Fort Ord, Monterey, const.	6,179,357
Moffet Field, Mountain View, construction	704,042
Camp Nacimiento, Nacimiento, construction	6,018,733
Napa, open lighters	264,000
Oakland, hous'g, naval depot, cargo vessels	13,042,497
Palo Alto, starters	2,535,368
March Field, Riverside, construction	2,876,026
Sacramento, warehouse	405,000
McClellan Field, Sacramento, housing	119,488
Salinas, housing	592,423
San Bruno, reservoir	106,000
San Clemente Island, construction	300,000
San Diego aviation facilities, planes	257,938,464
San Francisco, destroyers, cargo ships, oil	290,489,221
Fort Barry, San Francisco, housing	241,400
San Luis Obispo, tent camp	4,286,853
San Pedro, naval base construction	45,603,438
Fort MacArthur, San Pedro, construction	421,500
Hamilton Field, San Rafael, construction	735,377
Santa Barbara, construction	1,171,776
Santa Monica, airplanes	208,614,270
Mines Field, Santa Monica, warehouse	121,385
Stockton, housing,	

hangar, airport	606,326
Terminal Island, construction	250,000
Vallejo, housing	2,243,418
Camp McQuaide, Watsonville, housing	448,500
California state total	\$1,247,760,628
COLORADO	
Denver, food, airport	\$ 2,197,290
Fort Logan, housing	287,645
Lowry Field, Denver, construction	4,347,230
Pueblo, ordnance	4,536,000
Colorado state total	\$11,368,165

CONNECTICUT	
Bridgeport, airport, ordnance, supplies	\$100,199,089
Bristol, steel	282,977
Broad Brook, blankets	191,100
Derby, ordnance	106,675
East Hartford, propellers, engines	182,886,283
Fitchville, comforters	343,500
Gilman, comforters	101,047
Groton, submarines and facilities	71,875,000
Hartford, ordnance, housing	36,664,046
Manchester, parachute silk	831,008
Meriden, tableware, telephones	1,239,879
Middletown, overshoes	110,880
Naugatuck, raincoats, overshoes	456,860
New Britain, ordnance	401,360
New Haven, airport, comforters, ordnance	2,689,009
New London, submarine, ordnance, const.	50,584,681
Stamford, pumps, tugs	519,629
Stratford, airplanes	30,279,070
South Meriden, pumps	106,560
South Norwalk, ordnance	125,998
Thomaston, ordnance	103,347
Unionville, sweaters	127,050
Waterbury, ordnance	21,683,544
Waukegan, plant	103,000
West Hartford, machinery	325,187
Windsor, toweling	258,943
Windham, airport	157,646
Yantic, uniform cloth	242,250
Connecticut state total	\$502,995,618

DELAWARE	
Claymont, steel	\$ 1,343,096
Fort du Pont, Delaware City, housing	826,806
Milford, dental supplies	108,960
Wilmington, explosives, cargo boats	23,914,478
Delaware state total	\$26,193,340
DIST. OF COLUMBIA	
Bellevue, construction, naval mag.	\$ 675,000
Washington, construction, tanks, radio sets, utensils	39,706,540
Bolling Field, construction	100,000
Ft. Meyer, building	191,700
Dist. of Columbia total	\$40,673,240

FLORIDA	
Avon Park, airport	\$ 117,729
Bradentown, trailers	485,146
Daytona Beach, airport	157,928
De Land, municipal airport	120,272
Fort Myers, airport	107,749
Jacksonville, naval air station	17,844,353
Key West, submarine basin, housing	1,159,391
Lake City, airport	136,659
Lakeland, airport	179,345
Melbourne, airport	212,875
Opa Locka, Miami, naval air station	4,820,066
Orlando, airport	1,060,710
Panama City, airport	148,623
Pensacola, naval air station	6,162,433
Sarasota, airport	313,815
Camp Blanding, Starke, construction	9,198,420
Tallahassee, airport	1,155,021
Tampa, cargo ships, airport	15,440,489
MacDill Field, Tampa, construction	6,974,900
Eglin Field, Valparaiso, const., housing	507,909
West Palm Beach, airport	1,949,020
Florida state total	\$68,252,353

GEORGIA	
Albany, airport	\$ 174,587
Americus, construction	274,673
Atlanta, construction, airport, ordnance	5,486,757
Fort McPherson, Atlanta, reception center	287,000
Chamblee, airport	406,805
Columbus, housing	2,024,000
Fort Benning, Columbus, cons.	7,898,846
Camp Stewart, Hinesville, construction	2,558,136
Macon, airport improvements	315,451
Camp Macon, Macon, const.	5,434,880
Rossville, blankets	5,807,375
Fort Oglethorpe, Rossville, construction	339,500
Savannah, airport, tents, fuel	1,670,113
Toccoa, ordnance	4,569,290
Winder, coats	133,500
Georgia state total	\$37,380,913

IDAHO (under \$100,000)	
ILLINOIS	
Aurora, ordnance	\$ 1,040,045
Belleville, shoes	123,750
Scott Field, Belleville, housing construction	2,856,196
Carmi, underwear	194,100
Champaign, gloves	157,014
Chicago, ordnance, supplies, trucks	111,127,489
Fort Sheridan, Chicago, construction, housing	1,479,736
East Alton, ordnance	92,168,169
Cicero, coats	579,200
Downers Grove, parts	114,583
East Moline, housing	1,301,000
Genoa, switchboards	367,730
Hanover, cloth	133,402
Harvey, engines, machines	2,781,561
Kewanee, ordnance	1,664,250
La Grange, ordnance	149,742
La Salle, ordnance	189,318
Moline, ordnance	496,000
O'Fallon, cylinder assemblies	145,800
Peoria, const., equipment	287,544
Quincy, trailer sets	314,114
Chanute Field, Rantoul, const.	5,167,456
Camp Grant, Rockford, const.	3,950,385
Rock Island, arsenal construction, ordnance	5,673,625
Savanna, ordnance, depot, housing	7,248,150
Great Lakes, Waukegan, Naval Training Station	2,962,231
Wilmington, explosives plant	68,105,332
Illinois state total	\$310,777,922

INDIANA	
Anderson, ordnance	\$ 4,872,473
Burns City, construction	2,500,000
Charlestown, explosives plant	69,050,000
Evansville, fire units	422,300
Fort Wayne, radio receivers	652,189
Hammond, ordnance	838,150
Indianapolis, ordnance	76,505,483
Fort Benjamin Harrison, Indianapolis, building	2,121,300
Jeffersonville, construction	2,376,878
Kokomo, ordnance	508,000

La Porte, cloth	266,805
Lebanon, ordnance	525,000
Madison, ordnance	4,183,770
Marion, cable	138,000
Michigan City, air compressors	795,326
Mishawaka, shoes, raincoats	1,625,810
Portland, suits	113,400
Richmond, underwear	991,095
Seymour, blankets	354,418
South Bend, plant, aircraft	32,298,998
Union Center, shell loading plant	38,300,000
Indiana state total	\$239,439,395

IOWA	
Burlington, const. ordnance	\$52,480,872
Cedar Rapids, ordnance	1,046,535
Davenport, plant loan	10,000,000
Camp Dodge, Herrold, const.	257,158
Iowa City, airport	180,694
Sioux City, coats	130,819
Iowa state total	\$64,096,078

KANSAS	
Fort Leavenworth, const., temporary housing	\$ 844,396
Fort Riley, Junction City, construction	5,213,958
Marshall Field, Junction City, construction	249,400
Wichita, airplanes, parts	37,090,544
Kansas state total	43,398,298

KENTUCKY	
Fort Knox, const., housing	\$ 9,348,334
Frankfort, underwear	206,397
Louisville, fuel, ordnance, coats	7,431,124
Bowman Field, Louisville, housing	1,392,120
Fort Thomas, Newport, housing	159,700
Kentucky state total	\$18,537,675

LOUISIANA	
Alexandria, camp const.	\$ 4,242,655
East Baton Rouge, const.	749,752
New Orleans, boats, tugs	7,203,754
Shreveport, municipal airport	277,115
Barksdale Field, Shreveport, construction	1,162,375
Louisiana state total	\$13,635,651

MAINE	
Auburn, airport	\$ 383,930
Augusta, shoes	166,500
Bangor, construction, airport	705,726
Bath, cargo ships, destroyers	174,523,212
Brunswick, airport	165,940
Caribou, construction	161,104
Corinna, serge cloth	173,209
Cushing Island, temp. housing	119,000
Houlton, construction	4,248,200
Lewiston, sheets	670,836
Lisbon Falls, cloth	109,250
Millinocket, airport	167,696
Oldtown, service shoes	148,500
Portland, temp. housing	1,448,589
Fort McKinley, Portland, temporary housing	127,000
Presque Isle, construction	388,529
Princeton, improvements	399,874
Sanford, airport	358,036
Waterville, blankets	2,341,500
Maine state total	\$186,806,731

MARYLAND	
Aberdeen, ordnance, const.	\$ 5,176,620
Annapolis, construction	3,794,880
Baltimore, ordnance, ship repair, airplanes	262,653,189
Coast Guard Depot, Curtis Bay, construction	113,894

Edgewood, arsenal const., ordnance	23,458,339
Elkton, ordnance, lights	774,293
Frederick, hangar	110,150
Hagerstown, airplanes, const.	8,693,391
Holabird, Quartermaster Depot, construction	200,000
Indian Head, housing, plant construction	1,945,400
Ft. George G. Meade, Laurel, construction	8,392,756
Oella, overcoating	124,375
Secretary, trousers	312,348
Sparrows Point, cargo ships	39,203,440
Maryland state total	\$354,953,075

MASSACHUSETTS	
Athol, shoes	\$ 280,800
Attleboro, ordnance	591,294
Fort Devens, Ayer, const.	8,763,874
Beverly, Beverly Airport	168,866
Boston, textiles, naval vessels	186,310,242
Ft. Andrews, Boston, temporary housing	152,000
Ft. Banks, Boston, temporary housing	265,000
Brockton, shoes	1,722,850
Cambridge, raincoats, submarine cable	935,288
Chelsea, shoes, naval hospital	2,896,699
Westover Field, Chicopee, construction	4,144,898
E. Douglas, blankets, overcoats	1,711,120
Fall River, hats, construction, and equipment	358,518
Camp Edwards, Falmouth, construction	7,240,462
Fitchburg, ordnance	965,000
Framingham, raincoats	109,848
Greenfield, plant expansion	1,009,000
Hingham, depot	176,352
Holyoke, cloth	378,500
Hudson, shoes	655,951
Hyannis, construction	116,397
Indian Orchard, valves	120,272
Lawrence, flannel shirting	4,239,300
Loomister, airport imp.	121,270
Lowell, serge cloth	652,846
Malden, overshoes	221,500
Methuen, cloth	1,419,144
Middleboro, shoes	205,200
Milford, raincoats	326,092
Neponset, fittings	4,500,000
New Bedford, ordnance	714,668
Ft. Rodman, New Bedford, temporary housing	289,898
North Adams, gas masks	171,908
North Andover, airport imp.	120,531
Norbury, cotton sheets	305,150
Pittsfield, flannel shirting	696,250
Quincy, cruisers, aircraft car.	527,329,888
Salem, shoes	530,300
Southbridge, aviation assem.	170,500
Spencer, shoes	298,282
Springfield, armory, ordnance	10,662,295
Squam, naval reserve base	696,400
Uxbridge, cloth	4,255,766
Watertown, overshoes	686,625
Westfield, airport	147,743
West Hanover, ordnance	353,068
West Lynn, electric supplies	352,030
W. Springfield, ordnance	1,635,287
Worcester, machinery, cloth, ordnance	2,723,879
Massachusetts state total	\$783,341,521

(To Be Continued)

NEW! ENTIRELY PRE-ENGINEERED

DOME COOLER

SETS A NEW HIGH IN ALL-AROUND VALUE

Peerless
OF AMERICA INC.

Midwest Factory General Offices—515 West 35th Street, Chicago
Branch Offices: New York, Los Angeles, Dallas, Export Div., Detroit

For General Commercial Work and AIR CONDITIONING

Model 1825—2500, 2 HP. Water Cooled

M&E
EST. 1866

...Presents for 1941

NEW MODELS

MODERN DESIGN

INCREASED CAPACITIES

- Merchant & Evans Company has set its 1941 production schedule to keep pace with the ever-increasing demands which are being brought about by the Defense Program.
- The new 1941 line includes two new additions—models 35-MC and 50-MC which will be 1/3 H. P. and 1/2 H. P. respectively.
- Compact in design, yet capable of delivering greater B.T.U. capacity, due to increased condenser surface and oversize receivers—at no increase in price.
- Write now for complete details!

STREAMLINED, COMPACT—
Heavy Duty Units—1/5, 1/4, 1/3 HP. For small, compact mounting dimensions.

MERCHANT & EVANS COMPANY
PHILADELPHIA, PA. • Plant at LANCASTER, PA.

ECONOMIZER??

"YES SIR . . . IT'S A SUPERIOR ECONOMIZER!"

It will increase the overall capacity, and reduce the running time of your commercial job AS MUCH AS 20%.

ECONOMIZERS prevent sweating and frosting of suction lines—save compressor repairs caused by oil slugging—provide for active use of 100% of evaporator surface—and bring "on-the-line" jobs within the normal cycle range.

A profit-sharing investment for the merchant—a money-maker for refrigeration men!

Write for Catalog—it contains valuable information on Heat Exchangers.

Sold by leading jobbers everywhere

SUPERIOR VALVE & FITTINGS CO.
1509 West Liberty Avenue, Pittsburgh, Pa.
Export Dept.: 100 Varick St., New York, N. Y.

MAKE MONEY SELLING THIS REVENUE-PRODUCING EQUIPMENT



A COMPLETE ICE CREAM PLANT that Occupies Less Than 12 Square Feet

For grocers, bakers, druggists, confectioners, super-food markets, chain stores, restaurants, hotels, schools, department and variety stores, etc. Produces ice creams, frosted malteds, ices, sherbets and frosted fruit drinks.

DISTRIBUTORS: Write for Details and Franchise Facts Today

REFRIGERATION PRODUCTS DIVISION
TUTHILL PUMP COMPANY
935 EAST 95TH STREET • CHICAGO, ILLINOIS

Airtemp's 1941 Goal — 500 New Dealers By May 1



A two-act playlet, "One of 500," gave Airtemp district managers the story of how to line up dealers on the 1941 air conditioning line. Here Arthur Suit, as a district manager, calls on Jack Duer, as secretary of the local chamber of commerce, to discuss local dealer prospects.



In this scene from the Airtemp playlet, Mr. Suit (right) calls on Mr. Duer, who now portrays the new-business manager of the local power company, to enlist his cooperation in landing a top-flight local dealer for the line.



Climax of the Airtemp drama is when Mr. Suit and the new Airtemp dealer (Mr. Duer) call on "Dr. and Mrs. Watson" (V. P. Black and Robert Forsburg) to discuss year-around air conditioning for the new home they are building. Here they talk it over with their "builder," Clayton Kline, and the "architect," Norman Pleiman.

Skits Dramatize Use of Selling Tools

DAYTON, Ohio—Completing national distribution and aiding Airtemp dealers to get their share of the increasing market for air conditioning equipment is the objective of the 1941 program of advertising and sales promotion prepared by the Airtemp division of Chrysler Corp., and presented to 48 district managers of the division at a meeting here recently.

According to D. W. Russell, president of Airtemp, immediate goal of the campaign is 500 new dealers by May 1. In his talk to the field organization, Earl Marr, general sales manager, set a sales goal of 10% of the national air conditioning market, which he estimated at \$131,000,000 for this year.

Highlight of the convention was a series of skits written and acted by Arthur Suit, district manager at Washington, D. C., and Jack Duer, district manager at Cincinnati, under the direction of Ward Barnett, merchandising manager. Two acts dramatized the use of selling and merchandising tools in closing open territories, training salesmen, and developing retail business for dealers.

Two presentation booklets have been made available to the Airtemp field organization. One, "The Chrysler Airtemp Proposition," describes the company's complete line of winter air conditioning and "packaged" cooling systems, and outlines sales aids that have been prepared for dealers.

The second booklet, "Key to Year-Round Comfort" is a presentation of winter air conditioning, summer cooling, and automatic heating to the consumer market.

Both booklets feature a summer air conditioning unit for use with any direct-fired air conditioning system. Characterized as being "simple as your electric refrigerator" this unit contains coils, expansion valve, and radial compressor. Measuring only 19 by 32 inches, the conditioner is designed for installation in the supply air duct of a residence heating system.

The Airtemp line also includes 3 and 5-ton store cooling units designed to fit a variety of commercial and industrial applications.

To interest dealers in the Airtemp line, the company is embarking upon a consistent schedule of trade paper advertising. A series of direct-mail campaigns reaching the trade and prospect market has been prepared, as well as a talking slide film and a sales training course for dealer salesmen. This course will be directed by the newly organized Chrysler Airtemp Institute.

'Case Histories' Cited As Proof of Profit In 'Winter' Field

DETROIT—A series of "case histories" of Westinghouse winter air conditioning dealers, setting forth their business volume, gross profit, and manpower employed, were presented by J. J. Anderson, district representative, at the company's dealer meeting here recently.

Mr. Anderson gave a digest of the experience of several Westinghouse residential heating dealers during the past year, to prove the business is profitable.

One organization cited employed eight salesmen, eight engineers, and 30 installation men, sold 950 units, did a gross business of \$200,000, and made a gross profit of 40%.

In contrast, a smaller organization consisting of one salesman, two engineers, and six service and installation men sold a total of 114 units for \$30,000 and made 28.5% gross.

A third organization with five salesmen and 12 installation men made 200 installations for a total of \$100,100 and made a gross profit of 22%.

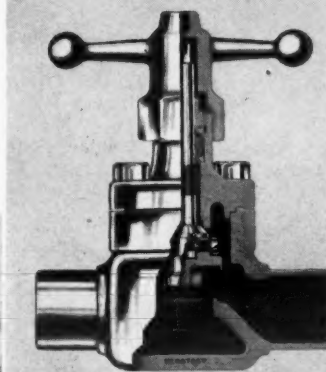
Still another concern with seven salesmen, three engineers, and 14 installation men sold 286 units for \$115,000 and made 25% gross.

The examples presented by Mr. Anderson showed gross profit figures ranging from 22 to 40%, with the majority in the 27% classification.

Airt

TO EVERY
AIR CONDITIONING
AND REFRIGERATION
NEED . . .

KEROTEST VALVES and FITTINGS



Individually designed and tested to give maximum efficiency and dependability. Kerotest Bronze Globe Valves—with integral sweat connections—not only save time and trouble, but also assure full flow of refrigerant equal to the flow-capacity of the tubing. An added feature, too, is the non-rotating stem head, eliminating wear.

KEROTEST

KEROTEST MANUFACTURING CO.
PITTSBURGH, PENNSYLVANIA

'I WON'T BUY A GAUGE WITHOUT THE RECALIBRATOR!'

THAT has been the attitude of many service men since the RECALIBRATOR feature was incorporated in Marsh Gauges, Thermometers and Recorders. Experience and laboratory tests have shown that when a bourdon-tube instrument is knocked out of adjustment the mere removing and re-setting of the pointer at one point on the scale, does not correct it throughout the entire range. The Marsh RECALIBRATOR gets at the heart of the trouble, however. By simply turning the RECALIBRATOR screw (see illustration) the distortion of the bourdon tube is compensated for and this recalibrates the instrument throughout its entire range. Gauges and dial thermometers with this feature cost little more than the ordinary kind. It is an exclusive Marsh feature.

Ask for the big refrigeration catalog covering this and other Marsh betterments.

JAS. P. MARSH CORPORATION
2067 Southport Avenue Chicago, Ill.



Compound Gauge



High Pressure Gauge

MARSH Refrigeration Instruments
GAUGES—THERMOMETERS—RECORDERS—MERCURY SWITCHES

AIR CONDITIONING & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office;
Established 1926 and registered as
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F. M. COCKRELL, Founder

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New Customers, Old Habits

REVELATION that 62% of all defense contracts have been let to firms along the Atlantic seaboard between Boston and Newport News, and that 18% of the defense contracts have been let to Pacific Coast manufacturers, is further substantiation of the theory that retail distribution of appliances this season will be "spotty."

Eventually the defense program with its consequent reemployment, may bring increasing business activity to all corners of the nation, but for 1942, the market will be selective.

"Shotgun" promotion (such as the heavy use of national magazine advertising) has thus lost caste with the market analysts currently. They favor increased point-of-sale promotion in the spots that are booming.

It's a totally new group of buyers that is coming into the picture. Families that have been struggling along on \$600 to \$800 a year are now in line for \$1,800 to \$2,000 annual incomes—believe it or not. Factory workers who could never count on more than five or six months labor a year now face the pleasant prospect of 52 weeks of employment per annum plus juicy overtime.

MANY WILL HAVE INCOMES DOUBLED

These are the people—in this "poor man's prosperity"—who are the liveliest prospects for electrical appliances in 1942. When you consider that thousands upon thousands of families may have their incomes doubled this year, you can see what really terrific prospects they are.

In this situation Sears-Roebuck and Montgomery Ward are licking their chops. They figure they have the best chance to sell to these people, because these prospects already have the habit of trading with chain stores and the cut-rates.

Families to whom the saving of pennies in shopping has long been vital may be ready to buy silk shirts and Nylon stockings now, but aren't they likely to buy where they feel at home? That's what the chain stores figure, and that's what is worrying some of the better department stores.

Dealerships that were formerly "prestige accounts" for manufacturers are the dealerships that need to do the most local advertising, the most missionary work, to catch some of this running stream of new money.

True, most mercantile establishments are showing and will continue to show expanding volumes of trade. But in 1941 and 1942 enormous numbers of people who were formerly living on a bare margin of subsistence will have cash for "luxuries" for the first time in years and years. Will the so-called "prestige accounts" miss the boat on this great body of purchasing power? Will they, happy about small increases in sales volume, fail to cultivate all the new customers who have previously visited only their bargain basements?

OLD BUYING HABITS MUST BE SUPPLANTED

Frankly, some concerns who have "bet their all" on the department stores and furniture stores are worried. They see a golden stream passing them by if something isn't done to channel it into new directions. Old buying habits must be supplanted with new.

We used to talk about the "poor rich." Soon we'll be talking about the "rich poor." All the industry's carefully worked out sales formulas and sales approaches need to be re-examined in the light of this new situation.

It cannot be taken for granted that these people are fully educated as to the advantages of electric refrigeration, or as to the advantages of any particular make. They haven't been reading the national magazines during the last decade. They probably aren't reading them now.

For this "poor man's prosperity" a whole new strategy of refrigerator merchandising must be devised, if the parade is not to pass us by. It's a great problem, but rich rewards are promised for its solution.

What Others Say

Life Expectancy In Advertising

THE advertising business is made up primarily of people and ideas. They are important in every field, but particularly in a service industry where intangibles play the most important role. Hence we are inclined to believe that the problems related specifically to people in advertising are not sufficiently emphasized.

We may be wrong, and the experience of life insurance companies might not confirm it, but our impression is that too many brilliant men in advertising die young. Every week the obituary column of Advertising Age records the passing of important people in advertising, and frequently included among them are men whose careers have been cut short while they were still far from their peak of ability and capacity for service.

Life is uncertain, at best, and we agree that we may be overemphasizing a certain aspect of advertising in laying stress on the fact that the business is carried on primarily by young and middle-aged men, and that those beyond middle age, when experience and judgment are at their best, are in the minority. Perhaps this is just one of the characteristics of advertising as it is practiced today.

But we know that advertising is conceded to be a hectic business; that pressures of all kinds upon advertising executives are not unusual; and that many men who have established a competency have withdrawn from advertising

They'll Do It Every Time By Jimmie Hatlo



to enter other activities which impose less of a strain on their physical and nervous resources. We know that competitive pressure, especially among agencies and media, is probably greater than in any other business. We know that personal relationships are of unusual importance to business success, leading to undue emphasis on entertainment, which in many cases means too much alcohol and too little sleep. And we know that nervous disorders are not uncommon among those who have been willing to sacrifice themselves for business success.

When able men like Jim Young, Paul Cornell, and Bill Benton, to mention only a few, have withdrawn from advertising while still young and healthy, to devote their energies to government service, teaching or university administration, it may not be entirely due to the excessive expenditure of personal energy demanded by advertising, but it may suggest that because of the way the business is run, there is less of personal satisfaction in it than there should be.

What's the answer? Perhaps a better perspective and a better sense of proportion as to what is really important. B. C. Forbes has commented increasingly on the fact that big men in business have changed their definition of success to emphasize not merely money, but rather accomplishment which is personally satisfying and which includes a sense of social service as well as selfish gain. Maybe we should reorient ourselves and decide what we're after. Maybe our philosophy of advertising should include a better personal philosophy as well.

—Advertising Age

LETTERS

REFRIGERATION MAKING STRIDES IN SPAIN

Martin Ribalta Urpi
Hijo de J. Ribalta
Barcelona

Dear Mr. Taubeneck:

Looking over the issue of the AIR CONDITIONING & REFRIGERATION NEWS corresponding to October 16, my attention was attracted by a letter addressed to you by Professor Micheli of Milano, under the title of "What Life Is Like in Wartime in Italy."

After having read it carefully I ought to point out a paragraph of same in which, though Professor Micheli confesses he does not know much about my country, I believe he speaks too despectively as regards the interest we may have in matters concerning refrigeration. He says:

"The Spanish translation will undoubtedly prove very useful in South America and a very ready sale of the Manual so translated, cannot fail to follow. But in Spain? I do not know much about that country, but I doubt, she is not yet in a condition to apply herself seriously to matters of refrigeration. They are still concerned with such "hot" matters that I am afraid your Manual would not stand much chance of being looked at."

In this respect I should like to make you understand that we businessmen in Spain are not concerned with what he calls "hot"

matters. I am ready to recognize that my country is not to be compared with the United States, the British Empire or Germany for instance, in the refrigeration line, but this does not mean that she has no interest in refrigeration matters.

We, in the refrigeration line, do have time to read all that is published about refrigeration in our language or another. Here, in Spain, there are large commercial installations as well as household refrigerators installed in many homes, and a lot of people is highly interested in refrigeration affairs. I may say in my turn that refrigeration is also making considerable strides in this country, in spite of what Prof. Micheli may think. Our experts are anxious to acquire technical knowledge from abroad and for this reason we are in a position as to read your publications.

I am perfectly aware that due to unfortunate circumstances Spain has been obliged to reduce her importations, but also I should like to remind Prof. Micheli that according to a AIR CONDITIONING & REFRIGERATION NEWS report, Italy has imported during the last years, less refrigerators than we. I think nevertheless this is not a reason to make one believe that in such or such country there is no interest in the refrigeration affairs.

During the season 1939-1940, three technical publications upon the subject of "Refrigeration Installations" have been issued in this country, produced by Spanish engineers specialized in refrigeration.

Now and in view of the present importation restrictions by the government, some financial groups have erected three factories devoted to manufacturing refrigeration equipment. One of these works produces commercial installations and the other two are devoted to household refrigerators. They manufacture over 3,000 units per year which may be ridiculous compared with the States production ciphers but not if we keep in mind the European production.

Besides there are here, several distributors of American refrigerators, like myself, who are ready to undertake the refrigerators equipment manufacturing in agreement with our represented firms, when the opportunity arises.

Dear Mr. Taubeneck I may assure you that I am always much pleased in reading the issues of the AIR CONDITIONING & REFRIGERATION NEWS and beg you to let me know of any other publication which appears in this respect.

M. RIBALTA

FOUND: RESTAURANT SERVING OCTOPUS STEAK

Chill-Quick Corp.
325 E. Chicago St., Milwaukee, Wis.
Managing Editor:

In your issue of Jan. 22 (page 20), you printed an item to the effect that Mr. A. E. Stuckert of the Louisville Refrigeration Co. —a genuine gourmet—has long been on the hunt for a restaurant which serves octopus steak.

Since you appealed to your readers for assistance in this worthy cause, our operatives immediately got to work, and, we are happy to report, have located such a spot—just a couple of short blocks from our office.

No one here has gotten around to trying one of these steaks except our president, A. R. Tomson, whose photo appears on page 14 of the same issue. He proclaims them to be a real delicacy—something like shrimp.

But the Wisconsin spirit of hospitality was not to be denied, and our vice president, Ralph O. Martin, has written Mr. Stuckert inviting him to stop in for an octopus steak and, perhaps, a visit to some of the institutions for which Milwaukee is famous.

H. E. BECHLER,
Sales Promotion Manager

Explain New Conditioning Sales Plan



H. F. Hildreth (left), sales manager, and W. R. Mason, in charge of advertising for the Westinghouse home heating and air conditioning department, are winding up a tour of 20 cities, announcing the intensified promotion of "packaged" air conditioning equipment through all types of Westinghouse conditioning dealers.

Instrument Panel Women Understand



When "Miss American Aviation" (Margaret Mellon of Chicago and Southern Air Lines) dropped in at General Electric's headquarters, Range Manager Jack Poteat delighted her with a demonstration of one of the new super range models.

When Is Profit an 'Excess Profit'?

How New Treasury Regulations Affect Profits Tax Estimate

By J. S. Seidman, C.P.A., Seidman & Seidman, New York City

The Treasury Department has just issued its regulations on the excess profits tax imposed on corporations beginning with 1940. The regulations are numbered 109. They clear up a number of doubtful points in the law.

Under the law, a corporation may elect one of two ways of figuring the part of its current earnings that are normal and hence exempt from the tax. One way is by reference to its earnings experience in 1936-1939. Ninety-five per cent of the average earnings during that period are regarded as normal. The other way is related to the capital investment in the corporation. Eight per cent of the investment is regarded as a normal return. The regulations cover in detail how to figure the earnings for 1936-1939, and also how to compute the capital investment.

One of the outstanding features prescribed by the regulations regarding 1936-1939 earnings, is that the earnings are not necessarily the amounts reported or taxed for income tax purposes during those years. If the amounts reported or taxed were incorrect, the correct earnings are the present yardstick even though it is now too late for the government to collect additional

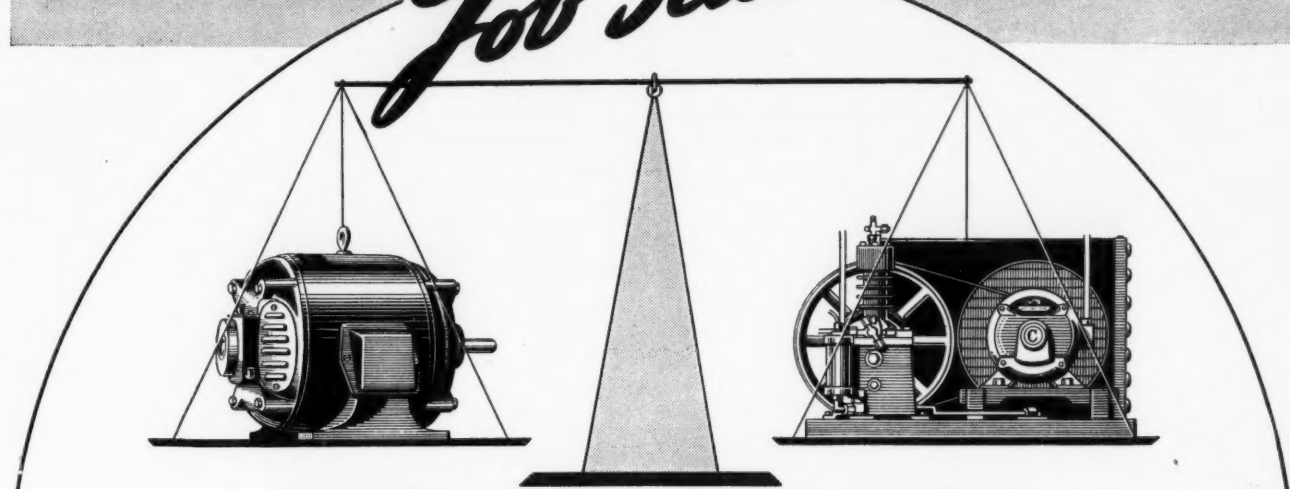
taxes, or for the corporation to get refunds, based on the corrections.

Also, the law requires that in arriving at the earnings experience in 1936-1939, the income taxes for those years are to be considered as a deduction. The regulations say that the deduction is to be the correct income taxes for those years, and not the actual taxes paid, if there is a difference between the two.

In the matter of capital investment, the regulations declare that if a corporation buys back its own stock, and the purchase is made for its treasury as an investment, then there is no reduction in the capital investment. However, if the stock is later cancelled, or if the purchase in the first instance is to retire the stock, then a reduction in capital investment does take place.

The law contains an important provision designed to give relief to corporations whose profits for the current year include certain abnormal items of income. The items are regarded as abnormal if they are unusual in character or amount and really are applicable to other years. The relief provided is to allocate the income backwards or forwards to the years that it really belongs,

In Air Conditioning CENTURY Job Selected MOTORS



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Every air conditioning installation needs a quiet starting and quiet operating motor. But the different pieces of driven equipment may be better served by different types of motors. For illustration—

Job Requirements

- For air cooling
- For air heating
- For air circulating
- For fluid pumping

Century Advantages

- Century Type SCH have high torque to start and bring the modern compressor up to speed without over-motoring the load. They are quiet and unusually free from vibration.
- New Century Type SP streamlined standard flange Oil Burner Motor. Both capacitor and "Repulsion Start" type motors for stokers, the latter where low starting current is required. Motor insulated to resist damp basements.
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- Type SCX motors require 35% lower starting current. Starting current is often a very important problem.

To get peak performance from your air conditioning equipment, the motor should be selected so as to best fit the demands of its particular job. That's what we mean when we say Century Job Selected Motors balance the machines they drive—the motor characteristics may be engineered to meet the requirements of any air conditioning application.

Whatever the requirements of your machines or your products, Century Job Selected Motors may well help save production time and step up performance too. Century's wide diversification of motor types, kinds, and sizes, up to 600 horsepower, makes proper motor selection an easy task for the Century Motor Specialist. Why not call him in today?

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Direct Current Motors	1033
Generators and Motor Generator Sets	935

and to that extent take it out of the current year's profits. This allocation is made for excess profits tax purposes only, and the tax, if any, for the various years involved, is determined or re-determined giving effect to the allocations.

The law does not say how the allocations are to be made. The regulations fill the gap. Thus, if in 1940 an abnormal judgment or claim is collected, growing out of damage done in 1935, the collection is allocated to 1935. So also if in 1941 a contract is completed at a profit of \$100,000 and the contract had been worked on for more than one year, the \$100,000 is allocated to all the years when the work was done, based on the amounts spent on the work each year.

Where income is attributable to research work or patents that took over a year to develop, such income can be allocated back to the years that the research or patent work was going on, based on the expenditures in each year and the progress made in each year. Another per-

missible method of allocation is to spread the income equally over the entire period from the time the research or patent work began to the time the income was obtained.

A corporation has taxable income when it is paid a lump sum by a tenant who wants to get out of a real estate lease. That income can, for excess profits tax purposes, be spread over the remaining life of the lease.

Suppose the tenant has put a building on land leased until 1940 from a corporation. In 1940, the corporation has income to the extent of the value of the building, and must pay the regular 1940 income tax on it. For excess profits tax purposes, however, that income can be allocated back over the life of the lease. If the lease expired in 1950 but was cancelled in 1940, the 1940 income, measured by the value of the building, is to be spread over the remaining life of the lease. A special allocation applies, however, if the building will outlast the remaining life of the lease.

Crosley Gets Contracts At 2 Army Posts

CINCINNATI—Award to Crosley Corp. of two additional contracts in connection with the national defense program has been reported by R. C. Cosgrove, vice president.

On a U. S. Housing Administration project at Rantoul, Ill., planned to relieve a shortage in housing facilities in a vital industrial area, Crosley has been awarded the contract for 100 refrigerators.

Under another national defense contract at Flour Bluff, near Corpus Christi, Tex., where an important naval station is located, Crosley will supply 750 refrigerators, which will amount to more than 12 carloads.

These contracts follow closely upon the recent award to Crosley of two U.S.A. project jobs, providing for refrigerator installations in new homes being erected in Atlantic City and Knoxville, Tenn.

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How To Stay Out of Trouble

Servel Factory Service Manager Describes the Mistakes In Field That Cause Faulty Operation

NEW YORK CITY—What a factory service manager has found to be the major causes of faulty operation in commercial refrigeration systems, and his suggestions as to how such difficulties can best be avoided, were outlined by P. B. Reed, service manager, Servel, Inc. electric refrigeration and air conditioning division, at the division's recent annual eastern convention here.

The better manufacturers of refrigerating machines have constantly improved their products to the point where today, said Mr. Reed, any interruption of service or unsatisfactory operation of the higher class machines is far less likely to be the fault of the machine than of other causes such as moisture, air, dirt, or other foreign matter in the system, improper lubrication, unbalance between the capacity of the machine and of the evaporator for the temperature to be maintained, unsuitable conditions at the location of the machine unit, too slow or too fast circulation of air in the refrigerated fixture, poor installation methods, abnormal voltage of the electric current supply, incorrect adjustment of the expansion valve or controls. Causes of this category probably account for 90% of service calls.

"Quite frequently one of these causes will not be recognized in the

effect it produces, and some part of the equipment will be blamed as defective," Mr. Reed stated.

"For example, an expansion valve may be judged defective and perhaps even be removed and replaced by another when its failure may have been, and in over half the cases is, something over which the valve had no control such as the wrong type of oil in the compressor, improper location of the feeler bulb or the valve itself, incorrect adjustment, the wrong type or size of valve for that particular duty, or vaporization of liquid refrigerant in the liquid line ahead of the expansion valve."

Of all causes of service trouble moisture in the system is "Refrigeration Enemy Number One," declared the speaker. In addition to the direct result—freezing at the expansion valve which is bad enough in itself, moisture indirectly is the main cause of corrosion, and is the most frequent reason for introduction into the system of foreign material and the formation of sludges and the breakdown of oil.

"Any reputable manufacturer has processes for drying out his equipment so that you can feel reasonably sure that the machines, coils, expansion valves, and even the installation tubing comes to you dry," said Mr. Reed. "The manufacturers of methyl chloride and 'Freon-12' are very careful that their refrigerants are free of moisture, anhydrous, they call it. They even sample and analyze every drum or batch to be sure of the dryness.

PROOF OF SURFACE MOISTURE

"From whence, then, does the moisture come? In the first place, ordinary air contains some moisture in an amount depending on atmospheric conditions and when the coils and tubing are open during installation, moist air enters. The amount of moisture from this source can be considerable especially on damp days, in moist basements and with long runs of tubing especially if they are allowed to stand open quite awhile.

"If you want to get a surprise let a 50 foot length of 1/2-inch tubing open at both ends lie around a few days in a moist atmosphere. Unroll the tubing, pound one end tightly closed and raise that end to get a constant slope downward to the other end. Put a dry tumbler at the lower end. With a blow torch start at the upper end and heat the tubing slowly on down to the lower end. You will get not just a few drops of water, you may get one-third of a tumbler of water that was in the air in the tubing and clinging to the inner walls.

"But it takes but a few drops to cause trouble in an expansion valve, and less than that to cause corrosion in the system.

PROCEDURE WITH SERVICE DRUM

"One frequent source of moisture is the service drum for the refrigerant. If it is continuously filled and emptied by pumping out the refrigerant in gaseous form the water will gradually accumulate.

"Discharge a service drum entirely occasionally, also take out the valve and clean the drum, if, when shaking it you can hear scale or dirt.

"Be careful when opening the low pressure side of a system. The best plan is to pump it down to just above zero gauge. Then break the joint, replace the expansion valve for example, purge the valve slightly, and put the job back into operation without pumping a vacuum. If it is on a vacuum, moist air will rush in and the moisture will condense on the inner walls of the coil.

"Use only factory approved oil which is dry. Carry oil to the job in tight cans, preferably in original sealed cans. Frequent use of the same can invites moisture accumulation. Do not allow a can of oil to stand open, oil absorbs moisture from the air quite readily. If you stock oil in large containers draw the oil out by a spigot and take the air into the drum through a dehydrator, the inlet of which is kept capped when not drawing oil.

DON'T USE COMPRESSED AIR

"Never use ordinary compressed air to blow out lines, coils, or other parts of the system. Unless compressed air has been especially treated to remove the water it will be very wet. Nitrogen, which may be obtained in cylinders is probably best but dry carbon-dioxide may be used. A pressure reducing valve must be used with the standard cylinders of either of these gases as they are factory charged to a thousand or more pounds per square inch pressure."

In spite of all these precautions, said Mr. Reed, it is almost inevitable that some moisture at least will get into the system during installation. If care is taken this may not be enough to cause trouble either directly from freeze-up or indirectly from corrosion, sludge formation, etc.

"To make sure that the system starts out right many servicemen make it a practice of installing a dehydrator in the liquid line when the job is installed," Mr. Reed explained. "With certain provisions this is good practice. The dehydrator or dryer as it is sometimes called, should be of good design to prevent the desiccant or drying agent in the dryer from getting out into the system even if it 'sluffs' or breaks down.

"Do not under any circumstances use calcium chloride. It is very corrosive, and, moreover, dissolves into the water just like sugar does in coffee and no strainer or felt pads will stop it.

'DON'TS' WITH DEHYDRATORS

"Some servicemen simply leave on the dehydrator that was installed at the time of installation. It is preferable to remove it for it has fulfilled its purpose after a few hours and has no further use to the system and may develop into a source of a great deal of trouble if the desiccant, which is very abrasive gets out of the dehydrator and into the bearings, seal valves, and other frictional parts. Be sure that the dryers are equipped with tight fitting felt pads at each end to prevent

Making a 'Briefcase' Out of the Product



Sales are made by convincing demonstrations, believes Henry Sherman, Cincinnati branch manager for Fedders Mfg. Co., so he devised a simple method for taking some of Fedders' larger products right to the prospect, as shown here. The "handle" on the Fedders panel unit cooler is made from an ordinary shawl strap which can be purchased at a luggage store, providing a novel and effective way of demonstrating to prospects.

DYES DON'T WORK

"At present there seems to be a fad of 'poking' materials of various kinds into refrigerating systems for all sorts of purposes. The latest is to put a dye into the system, the idea being that if there is a leak the colored refrigerant will evaporate at the leak and leave the dye, thus showing the presence of a leak.

"In the first place, it isn't new by any means. We experimented with several processes of this kind 13 years ago but found it impractical and objectionable. Aside from

(Concluded on Page 11, Column 1)

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Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.

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FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

Reed Offers Series of Installation Hints Operation and Uses of Oil Separators To Reduce Usual Service Complaints

(Concluded from Page 10, Column 5) internal complications that may occur the method isn't much good at locating leaks. Parts of the system are of different color so no one dye will be visible at all places. The spot may not be in sight or may become covered with dust. It is no good at all on a low side working on a vacuum and very slow in showing up.

"Obviously it is no substitute for making the system tight at the time of installation and then going over it with soap-and-water solution or a good halide torch.

WHEN CONDENSER RUPTURES

"Comparatively large amounts of water may be introduced into the system in case of a leak or rupture between the gas and water passages of a water cooled condenser, as a result of the water freezing and bursting the water tubing. This may be caused by a below-freezing temperature at the machine location or it may be caused by purging the refrigerant out of the condenser rapidly, thus reducing its pressure and consequently its temperature below freezing. In other words, the condenser is simply turned into an evaporator.

"In such instances the best and almost the only thing to do is to remove all the refrigerant from the system, and the oil from the compressor, blow out the coils and lines, clean out the expansion valve and solenoids if any, repair or replace the condenser, and recharge with new refrigerant and new oil.

"Install a dehydrator of ample size in the liquid line and also if possible in the suction line. Watch the dehydrators carefully as two or more may be required to completely dry out the system and the desiccant in the first dryer or so may break down due to relatively large amount of water still left in the system.

HOW TO PULL A VACUUM

"Best practice in making a new installation is to pump a good vacuum on the system, a 'no bubble vacuum' which means that after the air has apparently all been pumped out and the system has stood on a vacuum for at least a half hour and if the vacuum pump be again started up there will be no bubble of air come out and that the system is really tight.

"Not only does this method remove practically all the air but it is also a good leak test, and in addition it removes most of the moisture due to the low boiling point of the water in the vacuum.

"In the hurry and bustle of these busy days it is more common practice for the serviceman to simply purge the air from the lines and evaporator. This doesn't get all the air out by any means and certainly not the moisture. The refrigerant and air simply mix although most of the air is swept out ahead of the refrigerant. The air that is left causes higher head pressures which lowers the capacity of the system, the efficiency of the machine, and increases the cost of operation. Purging out a new installation may

save a little time but it is costly in the long run."

Expansion valves are often unjustly accused, Mr. Reed concurred, but it is true that troubles connected with the feeding of the refrigerant by the expansion valve accounts for a very large part of service calls, whether the fault of the valve or not.

LOCATING THE FEELER BULB

"From my observations I venture to say that if we were to visit 25 installations at random around the country, we would find one or more of the following conditions on at least 10 of them:

"The expansion valve was not properly adjusted, that it or the feeler bulb was located in the wrong place; that the valve had not been properly selected to the particular job or that it was of poor design to begin with.

"Bear in mind that the purpose of a thermostatic expansion valve is to feed as much and no more refrigerant to the coil than the coil can completely evaporate when the machine is running and to shut off tightly when the machine stops. In far too many installations the valve is not feeding enough to make the coil fully active, or feeding too much so that liquid refrigerant is spilling out into the suction line perhaps even enough to get back to the compressor where it is actually harmful to the compressor being the chief cause of breakage of suction and discharge valves.

"Locating the machine unit in a place where conditions are unsuitable for its efficient operation has been the cause of many service calls. In the northern part of the country the trouble has usually been due to a cold location resulting in long off cycles, high temperatures, and stagnant air circulation.

"If it is not possible to place the machine in a location that will at no time go below 50 or 60° F. you may find it necessary to provide some device to force machine operation. Cutler Hammer, Detroit Lubricator, Penn. and Ranco make special controls that help.

WHAT IS 'BALANCED COIL'?

"Properly selecting the evaporator so that it balances the capacity of the machine or vice versa at the desired evaporator temperature is quite important, particularly in the case of blower type coils. If the evaporator is too small, it will have to be run too cold to give desired box temperature, dehydration will result until the coil builds ice when the box temperature will become higher than desired. Also the capacity of the machine will be lowered, causing it to run too much or perhaps continuously.

"Too large a coil is less common but may cause too high a suction temperature and pressure resulting in a warm box and an overloaded motor on the machine. The answer is to select the correct capacity coil for the load at the selected coil temperature and also select the machine with the right capacity to carry that load."

Outlined To Detroit ASRE

DETROIT—Advantages resulting from the use of oil separators in both high and low temperature work were outlined to members of the Detroit section of American Society of Refrigerating Engineers at their February meeting by Ed Kellie, sales manager of American Injector Co., Detroit.

Film of oil in the evaporator of a system, Mr. Kellie said, acts as an insulant, reducing the rate of heat transfer, despite the operation of the refrigerant, which must circulate faster to accomplish the same cooling effect. Evaporator efficiency consequently is reduced, he declared, and running cycle increased.

If the compressor is pumping oil, part of the coil is cut out. The insulating effect of oil in the system also affects operation of the control, Mr. Kellie said, although otherwise nothing may be wrong with it. Effect of oil in the system also tends to cut the effectiveness of a dryer if used on the system, since the crystals of the latter become oil-coated and cannot readily absorb moisture.

Remove the oil, and you remove much of the possibility of copper plating in the unit, Mr. Kellie asserted.

Function of an oil separator traps oil, and to keep the oil in the compressor at proper level, the speaker continued. Sump below the seat of the oil level also collects moisture, sludge, and other materials which

might otherwise adversely affect operation of the system.

While an oil separator has come to be considered an essential in low temperature work, to maintain the low temperature differential necessary to satisfactory operation of such applications, it also fills a definite need in many normal temperature applications by affording a safeguard for protection of the refrigerating unit after it gets into the field, Mr. Kellie said.

Not a cure-all for all operating difficulties, there are nevertheless definite conditions under which an oil separator will effect very notable improvements in general operating efficiency, he added.

Questioned as to whether or not the oil separator has a tendency to condense the refrigerant, Mr. Kellie admitted this was possible in installations in cold rooms, where it usually occurs during the "off" cycle. Remedy for this, he said, is to insulate the oil separator, to keep its temperature more constant.

James & Co. To Widen Air Cooling Activities

ST. LOUIS—James & Co. will handle the General Electric package air conditioning unit line on both a retail and distributor basis during 1941. Package units up to 10 tons will be marketed.

Tom Binder Joins Staff Of American Coils, Inc.

NEWARK, N. J.—Tom Binder of the T. W. Binder Co., refrigeration supplies wholesaling firm here, is now active with American Coils, Inc., manufacturing firm here, dividing his time between the factory and calling on manufacturers and jobbers, reports Jack Riordan, president of American Coils.

Harold Binder is directing the affairs of the T. W. Binder Co., it is stated.

Mr. Riordan also announced the following realignment of territories for the company's sales force:

Bill Boyd is now covering Philadelphia, Baltimore, and Washington, D. C.

Whit Freeman covers eastern Pennsylvania and New York state.

Jack Riordan covers the metropolitan district of New York and New Jersey.

Monroe Seligman covers Westchester County, N. Y., and the New England states.

American Coils has recently taken additional factory space to meet manufacturing needs, Mr. Riordan stated.

Pittsburgh Electric League Changes Its Name

PITTSBURGH—Name of the Electric League of Pittsburgh has been changed to the Electric League of Western Pennsylvania, the new designation being considered more descriptive of the area.

Avoid DIVIDED RESPONSIBILITY

WHEN you use expansion valves, solenoid valves and controls, all of which are engineered under the same close supervision, you have the best assurance of satisfactory performance and the greatest harmony of operation.

In addition, you have the protection of a single responsibility—no chance of disagreement, no misunderstandings. Under a single responsibility one engineering staff and one manufacturing organization stands back of all your control equipment. You are never in the middle.

Detroit Lubricator Company is the only organization manufacturing expansion valves, solenoid valves and controls. And Detroit Lubricator has made these products since the very beginning of the refrigeration and air conditioning industry, and has pioneered this equipment—all of which means satisfactory performance on your jobs.

Standardize on Detroit valves and controls and make it easier for yourself.



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Export Representatives: Melchior, Armstrong, Dossou Co., Ridgely, New Jersey

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You'll find the Miller line complete, too. Its 34 different gasket types enable you to service 80% of all refrigerators regardless of make. Sample card, price list and name of nearest jobber can be obtained by writing—

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A Masterpiece for Economy

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ADJUSTABLE PAD AND CARRYING HARNESS



Efficient, sturdy and economical. Provides safer handling and thorough protection of refrigerators. Pad and harness are separate units and both adjustable to practically all styles and sizes of cabinets.

Adjustable Pad \$10.00 each
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Write for latest folder and prices on pads for refrigerators, washers, ironers, ranges, radios, etc.

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Armstrong Offers 'Polar Wheel' For Smaller Locker Installations

Tiers of Lockers Mounted on Revolving Table In Insulated Room Form Compact Unit

By James McCallum

LANCASTER, Pa.—A new type of frozen food locker system known as the Polar Wheel and consisting basically of a revolving circular steel table about 14 feet in diameter upon which tiers of lockers are constructed around the circumference is being marketed by Armstrong Cork Co.

The Polar Wheel is designed primarily for use in branch locker plants or relatively small plants installed in grocery stores and meat markets.

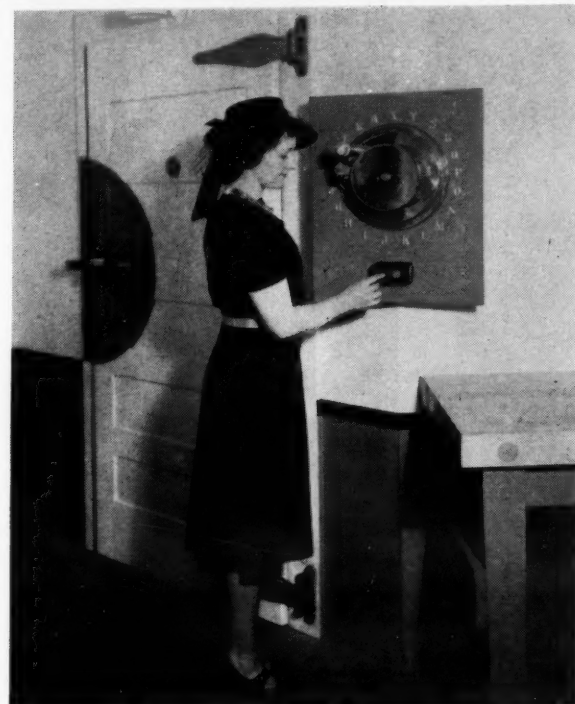
The open space in the center of the disc is available for installation of a quick-freeze cabinet or overflow lockers, or for bulk storage. This area is reached through an aisle which takes the place of one tier of lockers. The steel table revolves on three rollers or bearings, one of which is directly connected to a small electric motor located in a front corner of the refrigerated space.

The entire Polar Wheel system is enclosed in a corkboard insulated, zero temperature room which is accessible through a single master door.

Operation of the system is simple and automatic. Any patron desiring to use his locker merely sets the indicator on a lettered control dial outside the master door to the proper position for the tier in which his locker is located, pushes a button, and waits until the revolving wheel moves the proper tier of lockers into position behind the master door. Then he opens this door and proceeds to unlock his locker with his own key. Only 32 seconds are required for the wheel to make one complete revolution.

A single unit with five-high tiers of lockers has a 100-locker capacity and requires a space 15 feet 3 inches square by 11 feet 5 inches high for its installation. A single unit with two decks of four-high tiers has a capacity of 160 lockers and requires a space with the same horizontal measurements as the smaller set-up, but 16 feet 10 inches in height.

Between the two tiers of lockers on the "double decker" unit is a wooden platform made of dressed 2 x 6-inch lumber blocked together in the form of a grid to allow for air circulation. Center of this space can be used for the same purposes as the center of the lower platform. Upper deck of this two-story unit is reached from a mezzanine which the Armstrong company builds.



Just Push a Button . . .

. . . that's all the lady has to do to swing her locker into position behind the main service door, after properly setting the lettered dial control. The Armstrong Polar Wheel mechanism does the rest.

The two lower lockers on the four or five-high tier are drawers, with the remaining lockers being of the door type. Capacity of each locker is approximately 6 cu. ft.

Erecting plans show the insulation supported on a deck, but if an existing ceiling can be utilized for the erection of corkboard the five-high plant will require 10 feet 5 inches o.d. in height and the eight-high unit will require 15 feet 10 inches o.d.

Safety devices include switches which automatically shut off the motor when the cold storage door is open, or when someone is using the center space. Also, a plug door is

included for entrance to the motor in case of trouble. The floor section in the passageway is removable in case the wheel must be rotated without the motor.

The Polar Wheel, like its companion Armstrong locker system the Polar Chest, has as one of its chief advantages the fact that patrons remain in a normal temperature room while using their lockers, and need never enter the refrigerated area.

Two of the earliest Polar Wheel installations were at City Ice & Fuel Co., Westerville, Ohio, and Findlay Ice & Coal Co., Findlay, Ohio.

WELDED STEEL

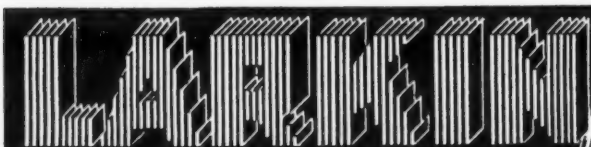
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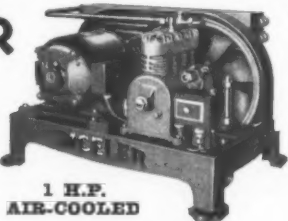
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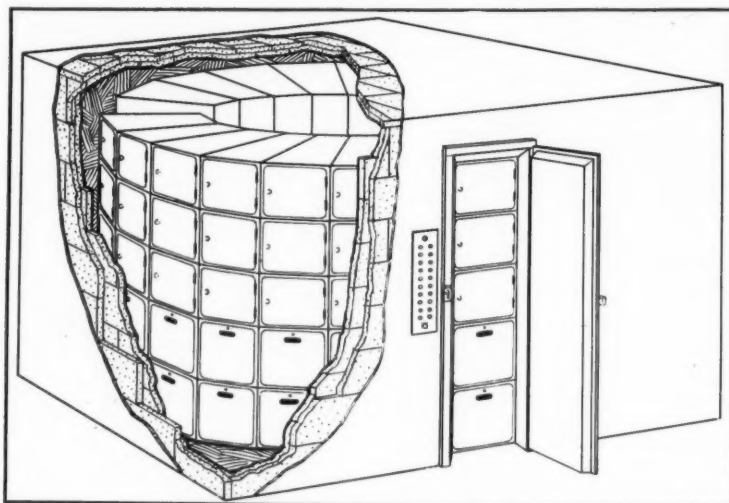
DEISSLER MACHINE COMPANY Greenville, Pa.

PIONEER OF FOUR CYLINDER REFRIGERATION



1 H.P. AIR-COOLED

Phantom Diagram of the 'Polar Wheel'



This cutaway view of the Polar Wheel unit shows the relative position of the locker tiers and the service door.

Missouri Plant Uses Air Conditioned Lobby and Processing Room as Advertising Theme

JEFFERSON CITY, Mo.—What is characterized as the only air conditioned commercial locker plant in the middle west was recently completed here by Frigidaire, when S & S Cold Storage Locker Plant Co. opened its first unit seven miles from this city on Highway 50.

Featuring 312 lockers, the new plant is designed to accommodate both farm and metropolitan trade, with a location equidistant from the Jefferson City city limits and produce farming district to the west. In the

first month of operation, 60% of locker renters were city residents, but this figure is slowly balancing with rural trade.

Both the waiting room lobby and the process room are completely air conditioned, with a separate cooling system. The plant has two 3-hp. Frigidaire compressors, one operating the locker refrigeration system and quick-freeze room; the other supplying the chill room and the air conditioning unit.

Air conditioning is almost a necessity in districts where summer heat reaches above 95° F., it was explained, benefiting customers with less temperature differentials between the process room and locker section. Customers coming from the outside can become accustomed to cooler temperature in the process room before entering the locker section of the building, thus eliminating risk of colds and stiffness.

This process is being advertised by newspaper and circulars as an extra asset of the S & S plant, comparing it with the policy of a deep-sea diver halting at various points during his descent to accustom himself to pressure.

Operators can do more work, it is explained, in the same amount of time, and meat or perishable products are kept in better condition. Temperature in the process room and lobby waiting room is kept at 80° F. with thermostatic control.

U.S. GOVERNMENT Specification

Filtrine

Cafeteria Coolers
Filtrine Mfg. Co., Brooklyn

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VIRGINIA

CASH-IN with



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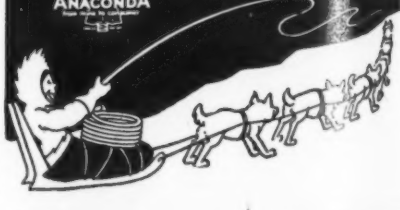
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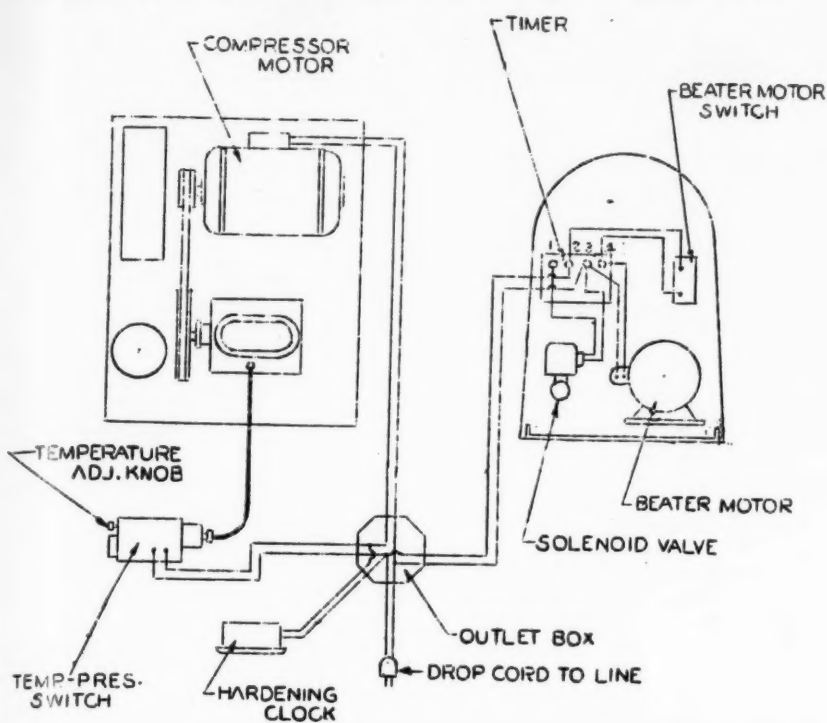
RANCO Inc. Columbus, Ohio, U.S.A.

RANCO TYPE O

ICE CREAM CABINET CONTROL



Fig. 25—Wiring Diagram For 'All-In-One'



Operating and Service Methods For Dry-Expansion Counter Freezers

By Arch Black and Dean C. Seitz

Editor's Note: This is one of a series of articles on the servicing of counter-type ice cream freezers, which have been appearing in the issues of AIR CONDITIONING & REFRIGERATION NEWS in the past few months. It will form one section of a general series on the servicing of low temperature equipment in common use by the retailer.

completing 2 minutes of heater operation.

When the solenoid valve closes the compressor pumps out the refrigerant in the shell of the freezer during the additional time the heater operates. If the cabinet temperature is cold enough the condensing unit stops on reaching the low pressure cut out point. If the cabinet is not cold enough the temperature element of the temperature pressure switch keeps the condensing unit running to refrigerate the cabinet after it has pumped the refrigerant from the freezer shell.

While the hardening clock is not operating, the temperature element of the temperature pressure switch maintains the temperature of the upper section at 3 to 7° F. and the temperature of the lower hardening section at -1 to -40° F.

These temperatures can be raised or lowered by means of the temperature adjusting knob of the temperature pressure switch (see Fig. 23). With normal adjustment of the cabinet thermostatic expansion valve and with cabinet temperatures as has been made mention of above the mix compartment temperature would be maintained at 30 to 36° F.

To raise the mix compartment temperature turn the adjusting nut of the thermostatic expansion valve to close the valve in a manner as has been previously explained.

Under ordinary conditions the thermostatic expansion valve operates at a suction pressure of 9 lbs. to 2 inches vacuum with "Freon-12" and 5 lbs. pressure to 9 inches of vacuum with methyl chloride.

Normal Pressures and Temperatures		Freon-12
		"F-12"
	Methyl Chloride lbs.	lbs.
Freezer Expansion Valve (Automatic)...	10	14
Temp.-Pres. Switch (Pressure Setting)		
Cut-In	8	12
Cut-Out	4" Vacuum	2
Head Pressure—		
60° F. Room	80	90
80° F. Room	125	130
100° F. Room	165	165

Liquid Carbonic Holding Service Meetings

CHICAGO—A series of service meetings, designed to acquaint ice cream manufacturers and service men with its 1941 line of products, is being held in major cities by Liquid Carbonic Corp.

Meetings on the west coast are being conducted by W. D. Jordan; those in the middle west by John G. Praetz and Harry Underwood; and those in the east by J. J. Ernst and B. Glaspey.

Dates and places of future meetings in the east are: Feb. 28, Boston; March 11, Elmira, N. Y.; March 13, Buffalo.

Scheduled midwestern meetings include: March 3, Nashville, Tenn.; March 7, Minneapolis.

Western meetings are planned for: Feb. 27, San Antonio, Tex.; March 1, Houston, Tex.; March 3, Dallas.

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New G-E Catalog Aimed At Rural Prospects

BRIDGEPORT, Conn. — "General Electric On the Farm," bringing together for the first time in one catalog a representative line of all appliances, equipment and services offered by General Electric Co. of interest to farm families, has been prepared by the G-E farm sales section. It achieves the threefold objective of telling the farmer about the products, about their prices, and where he can get them.

The 68-page catalog in 8 x 10-inch size has an attractive cover in four colors, featuring a pretty girl against a rural background. Color is also used in several of the profusely illustrated inside pages. Distribution to all farm homes having electric power is to be made through G-E dealers. Back cover provides space for imprinting the dealer's name.

Special services offered by the catalog include order forms for more detailed information and booklets, an order form for merchandise not handled by the local dealer, an explanation of how equipment may be bought through G-E Contracts Corp., a directory of G-E departments, and a chart for keeping a cost record.

First page sets out estimated costs of operating electric equipment of all types. Another list shows how much electric service may be had at an operating cost of 1 cent with various appliances. Center of the catalog features a woman's page which includes tips on running the home "from one woman to another," and announcement of a contest with prizes for the best letters on electrical appliances.

The Service Man's Notebook

By Henry Kronke

Mr. Kronke, a service engineer in New York City, compiles useful, handy data for use in his work as he finds a repeated need for certain kinds of information. The editors suggest that service and installation engineer readers of the NEWS cut these tables out for their own notebooks.

Gauge Pressures of Saturated Vapor

°F.	Freon-12 CCl ₂ F ₂	Methyl Chloride CH ₃ Cl	Sulphur Dioxide SO ₂	Isobutane C ₄ H ₁₀	Carrene CH ₂ Cl ₂
-40	11.0 in.	14.9 in.	23.5 in.	....	....
-30	5.5 in.	10.8 in.	21.1 in.	....	....
-20	0.6 lbs.	5.9 in.	17.9 in.	14.5 in.	....
-10	4.5 lbs.	0.2 lbs.	13.9 in.	10.9 in.	28.4 in.
-5	6.8 lbs.	2.0 lbs.	11.5 in.	8.8 in.	28.1 in.
0	9.1 lbs.	4.0 lbs.	8.8 in.	6.2 in.	27.8 in.
2	10.2 lbs.	4.9 lbs.	7.3 in.	5.2 in.	27.6 in.
4	11.2 lbs.	5.7 lbs.	6.5 in.	4.0 in.	27.5 in.
6	12.3 lbs.	6.6 lbs.	5.2 in.	2.7 in.	27.3 in.
8	13.5 lbs.	7.6 lbs.	3.9 in.	1.4 in.	27.1 in.
10	14.6 lbs.	8.6 lbs.	2.6 in.	0.2 in.	27.0 in.
12	15.9 lbs.	9.6 lbs.	1.2 in.	0.7 lbs.	26.8 in.
14	17.1 lbs.	10.7 lbs.	0.1 lbs.	1.4 lbs.	26.6 in.
16	18.4 lbs.	11.8 lbs.	0.9 lbs.	2.1 lbs.	26.4 in.
18	19.7 lbs.	12.9 lbs.	1.7 lbs.	2.8 lbs.	26.2 in.
20	21.0 lbs.	14.0 lbs.	2.5 lbs.	3.5 lbs.	26.0 in.
22	22.4 lbs.	15.3 lbs.	3.3 lbs.	4.3 lbs.	25.8 in.
24	23.9 lbs.	16.5 lbs.	4.2 lbs.	5.1 lbs.	25.5 in.
26	25.4 lbs.	17.8 lbs.	5.1 lbs.	5.9 lbs.	25.3 in.
28	26.9 lbs.	19.1 lbs.	6.0 lbs.	6.7 lbs.	25.1 in.
30	28.5 lbs.	20.5 lbs.	7.0 lbs.	7.6 lbs.	24.8 in.
32	30.0 lbs.	21.9 lbs.	8.0 lbs.	8.5 lbs.	24.5 in.
34	31.7 lbs.	23.3 lbs.	9.0 lbs.	9.4 lbs.	24.1 in.
36	33.4 lbs.	24.8 lbs.	10.1 lbs.	10.3 lbs.	23.8 in.
38	35.2 lbs.	26.3 lbs.	11.2 lbs.	11.2 lbs.	23.4 in.
40	37.0 lbs.	27.9 lbs.	12.4 lbs.	12.2 lbs.	23.1 in.
50	46.7 lbs.	36.8 lbs.	18.7 lbs.	17.8 lbs.	21.2 in.
60	57.7 lbs.	47.0 lbs.	26.2 lbs.	24.0 lbs.	18.8 in.
70	70.1 lbs.	58.7 lbs.	34.9 lbs.	31.1 lbs.	15.8 in.
80	84.0 lbs.	72.0 lbs.	45.0 lbs.	39.2 lbs.	12.3 in.
90	99.6 lbs.	87.3 lbs.	56.5 lbs.	48.6 lbs.	8.1 in.
100	116.9 lbs.	104.3 lbs.	69.8 lbs.	59.0 lbs.	3.1 in.
110	136.0 lbs.	122.5 lbs.	85.0 lbs.	70.4 lbs.	1.6 lbs.
120	157.1 lbs.	141.1 lbs.	106.2 lbs.	83.3 lbs.	5.1 lbs.
130	180.2 lbs.	161.6 lbs.	121.8 lbs.	97.3 lbs.	9.0 lbs.
140	205.5 lbs.	185.3 lbs.	143.9 lbs.	112.1 lbs.	13.6 lbs.



Annual Household Refrigerator Specifications Issue

FACTS ON ALL MAKES & MODELS

1941's most important issue of AIR CONDITIONING & REFRIGERATION NEWS for household distributors, dealers, salesmen, and service men will be off the press a week from today. It will contain the conveniently sized supplement of complete specifications on EVERY HOUSEHOLD REFRIGERATOR BUILT FOR SALE IN 1941. This is the only source of information on Non-Nema makes. Because you need extra copies of the supplement—all year—we are making several thousand reprints to satisfy the demand, just as we have every year. Regular single copy prices prevail. Order your supply now—buy them for yourself and for your salesmen. They'll increase your profits.

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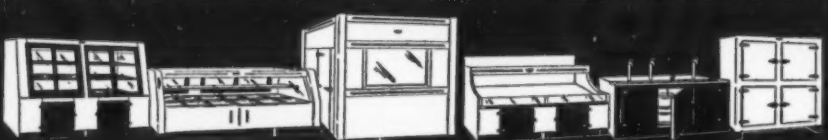
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Air Control in Industry

Low Humidity For Plastic Process Provided By Lithium Chloride and Refrigeration System

By T. H. Mabley, Engineer, Mechanical Heat & Cold, Inc., Detroit

The varied requirements of industry have introduced many interesting problems into the air conditioning field. In many instances, air conditioning application engineers have had to design special new equipment, or make new combinations of conventional equipment, to meet the growing demand for air conditioning in industrial processes.

An example of this is found in a recent installation made for Woodall Industries, a Detroit automotive parts manufacturer. This company recently began manufacturing a plastic product having a hard surface. After considerable study, research engineers for the company recommended that all manufacturing be done in a room having a temperature of 75° F. and a 10% relative humidity.

When the problem was presented to the air conditioning engineers, special consideration had to be given to the exceptionally low relative humidity. The problem divided itself into two angles of approach: first, how could the room conditions be reduced to such a low moisture con-

tent—actually 15 grains per lb. absolute humidity; secondly, how could the conditioned area be so isolated as to reduce the loss from heat and moisture gain with a temperature differential of 20° F. or more in the summer, and a moisture content difference represented by 104 grains per lb. outside, and 15 grains inside condition. The first was primarily concerned with the design of equipment, and the second involved the design of the room.

The room to be conditioned had to be 80 feet long and 35 feet wide, and was an area taken directly out of existing factory space. Three sides of the conditioned area were necessarily exposed to the plant working area. One reason for using this space was to make the flow of materials in and out of the room a simple process.

AIR-TIGHT ROOM

The room was carefully constructed of two layers of masonite, backed with a high grade of resin impregnated paper which served as a vapor barrier. The exposed outside wall, which included factory window sash, was entirely sealed and the windows caulked. This wall and all windows were covered with masonite and vapor resistant paper, in the same manner as the interior partitions.

Since all natural lighting was excluded, the room was illuminated with fluorescent lighting. The roof, which was already vapor-proof, was insulated to reduce summer heat gain. Great care was given to the caulking of all openings to reduce exfiltration, and, what was more important, to reduce the infiltration of vapor.

When the construction work was completed, the room had only a slot in the wall 40 inches wide and

1 inch high for feeding material into the room. Two doors used for access and the removal of finished products, were provided with air-lock chambers and properly weather-stripped.

Lithium chloride was used as the dehumidification medium in the air conditioning system. The conditioner was built up of two Kathabar contactor cells, air filters, blower, and steam heating coils.

An unusual feature of this installation is the use of lithium chloride to perform both sensible and latent heat removal. Both fresh and recirculated air are passed through the Kathabar contactor cells, and the air temperature is reduced to approximately 50° F., while the moisture content is reduced approximately 8 grains per lb., absolute humidity. This requires the circulation of 90 gallons of lithium chloride per minute through the contactor cells at a temperature of 48° F. Cooling of the lithium chloride solution or 'Kathene,' is done in a 'Freon' shell-and-tube cooler.

STEP CONTROLLER USED

A Westinghouse 40-hp. direct connected compressor provides the refrigeration. This compressor is equipped with a multiple arrangement of variable capacity control. It has been possible to control the solution temperature within a range of plus or minus ½° by this arrangement.

The control system consists of a modulating type temperature controller, installed in the solution discharge line, and connected to a modulating step controller which cuts in and out the various stages of refrigeration capacity depending upon the load. With this arrangement the refrigeration machine will operate with either 2, 4, 6, or 8 cylinders in

service, in accordance with the demand indicated by the temperature controller.

The control of conditions in the room is accomplished by two distinct methods. The temperature is controlled from a room thermostat operating a modulating steam supply valve for the heating coil. Due to the inherent design of the system and the unusual room conditions no high limit temperature control is necessary.

The room humidity is regulated by the temperature and density of the Kathene solution being supplied to the contactor cells. The solution temperature control previously described is manually adjustable and can be set at any desired temperature, according to the solution density.

(Concluded on Page 15, Column 1)

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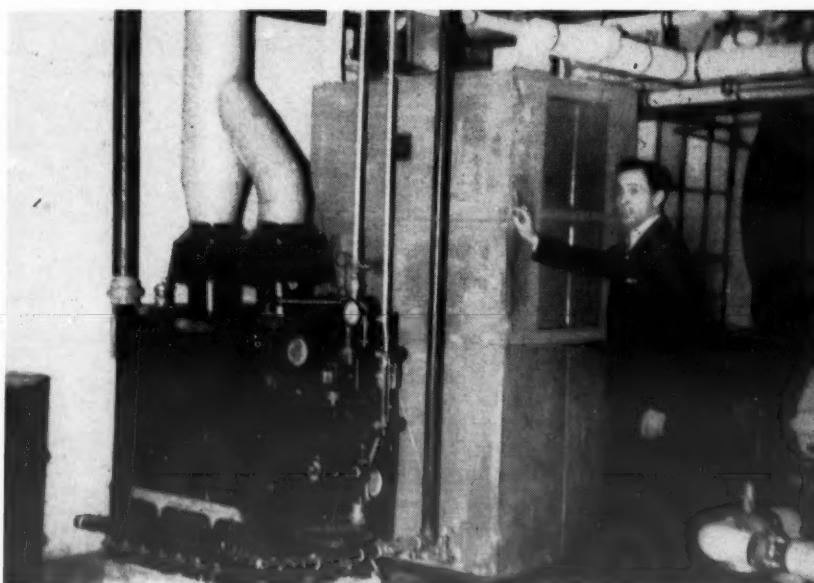
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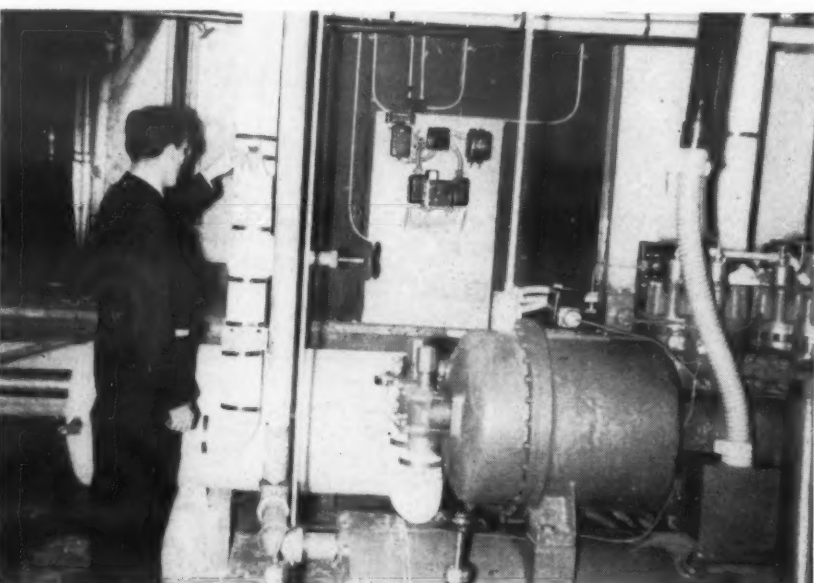


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Gas-Fired Drying System



T. H. Mabley, engineer, Mechanical Heat & Cold, Inc. of Detroit, with Kathene regenerating unit powered by the Westinghouse gas-fired boiler shown in foreground. An independent source of heat is necessary for periods when main factory system is shut down.



Westinghouse compressor, at right, cools lithium chloride solution to 48° F. in a shell and tube cooler. Step controller operating cylinder unloaders is used to hold temperature variation within close limits. The compressor also cools 1,000 c.f.m. of fresh air.

Vapor Infiltration Important Factor In Air Drying Job

(Concluded from Page 14, Column 5)

required to handle the latent load in the room.

The solution density is automatically regulated by a float control built into the regenerator sump. This control operates the steam supply valve to the solution heater used in connection with the regenerator. A very small portion (approximately 3 gallons per minute) of the Kathene solution circulated is passed through the heater and regenerator. In this portion of the equipment, the excess moisture taken up by the Kathene in the contactor cells is driven off and the concentrated Kathene then returned to the sump, thus increasing the density of the solution in the system.

The regenerator unit is a complete piece of equipment requiring comparatively small floor space, and includes the circulation pump for the system, the solution pump for Kathene storage and density regulation, the regenerator contactor cells, regenerator fan and motor, and a filter for regenerator air system.

The solution heater is mounted at the ceiling to permit the downward flow of steam condensate back to the boiler.

A gas-fired steam boiler was installed as part of this complete system to supply steam to the regenerator and the heating coils at all times. With this arrangement it is not necessary to rely on the plant steam supply, which is often shut down nights and week-ends during mild weather and in summer.

SHEET METAL SOLDERED

The conditioning unit containing the contactor cells was built on a platform in the equipment space located directly adjacent to the conditioned room. This unit could have been located in the conditioned area if space had been available. In the location selected, it was necessary to solder all sheet metal joints and connections for the supply ducts and housing to reduce vapor infiltration losses.

Blowers and filters used in this unit were selected to handle 11,000 c.f.m. Of this amount 8,000 c.f.m. is passed through the contactor cells, and 3,000 c.f.m. is by-passed around the cells to mix with the 50° F. conditioned air, thus raising the discharge temperature to 57½° F. The by-pass is built as a permanent part of the conditioner unit. Cleanable type filters are used for both fresh and recirculated air.

Another unusual feature of this

system is the direct-expansion pre-cooler for the fresh air intake. After a careful study of the room construction, size, and ventilation requirements, a figure of 1,000 c.f.m. was established as the volume of fresh air to be introduced. This amount was necessary to build up adequate pressure in the room to assure the proper exfiltration velocity through all openings.

It was necessary to keep the room under pressure to reduce the vapor infiltration to an economical point, while maintaining the absolute humidity differential required.

The fresh air intake duct is provided with a filter section and direct expansion cooling coil, 10 rows deep, having a capacity to reduce the incoming air from maximum summer conditions to 45° W. B. This is controlled by a duct thermostat and solenoid valve.

The air distribution system in the room is designed to give as even a temperature and humidity distribution as possible. This was accomplished by installing a supply duct running the length of the room at the ceiling, and the return duct was erected directly below. This arrangement provides a rapid air change without objectionable variation in air velocities.

Actual tests with the system in operation have shown that selected conditions can be maintained with a variation in temperature of not greater than 1½° F., and the relative humidity in the room can be maintained within a range of plus or minus 1% at the same time. This performance assures ideal atmospheric conditions for process work and the storage of materials.

The installation at Woodall Industries was engineered and installed by Mechanical Heat & Cold, Inc., Detroit Westinghouse distributor, in cooperation with the Surface Combustion Co. of Toledo.

New Theater System Halves Horsepower

NEW ORLEANS — Savings in actual horsepower requirements, and in the use of "off peak" storage of cold water, have been made possible by installation of a 275 hp. Westinghouse air conditioning system in the Saenger theater. Three 75-hp. hermetically sealed compressors replace the old 524-hp. CO₂ refrigeration plant used to air condition the 3,400-seat theater since its construction in 1927.

Two 150-ton carbon dioxide compressors, each driven by a 250-hp. 150 r.p.m. synchronous motor, were used to cool a large tank of water by means of Baudelot coils. This cooled water was brought into contact with the cooling air by spraying it into the air stream in two conditioning chambers.

Two pumps, each driven by 25-hp. motors, forced the cold water from the tank to the conditioning chambers. A condenser pump forced the used water back to the Baudelot coils for re-cooling. Two fans, one driven by a 25 hp., the other by a 20-hp. motor were used to circulate the cooled air in the theater. These pump motors plus the compressor motors with their necessary exciters formed an electrical load of about 491 kw.

It was finally decided to replace the old system with three hermetically sealed 75-hp. compressors, using "Freon" as their refrigerant. Horsepower required by the three new compressors is only 225, as compared to 524 hp. needed before. The new system cools by direct expansion through new coils placed in the existing conditioning chambers. Full automatic control is provided.

Because operation of the cooling system between 5 p.m. and 7 p.m., the local utility load peak period, costs more than at any other time, the old water system with its big storage tank is utilized to store up cooling capacity to take care of this daily two hour period. Excess compressor capacity available during normal working hours is used to cool the water in the tank by means of the existing Baudelot coils.

During normal cooling operation, the old system required 491 kw., and if cooling was required during the daily off-peak period, this 491 kw. load had to be put on the line, thus exacting a heavy cost penalty. Now, on direct expansion, the new system by eliminating all water pumps, requires only about 205 kw., or 58% less power.

When the water system is being cooled for storage, with necessary running of the circulating pumps, the required power increases to about 240 kw., still a decrease of 51% from that required by the old system.

This modern system, applied to match specific operating conditions, was designed and installed under the supervision of T. J. Knight, Jr., consulting engineer, and Equitable Equipment Co., local contractor.

Carrier Movie Available For Clubs, Schools

SYRACUSE, N. Y.—Following preview showings in Chicago and New York City, the new air conditioning movie "Weather By Carrier" is being made available for club, school, church, and other educational uses. Inspired by a lecture demonstration in the Carrier Igloo during the recent New York World's Fair, the picture is claimed to be the first industrial movie devoted entirely to the subject of air conditioning.

Theme of the 15-minute movie is based on an educational lecture and demonstration, designed to reduce the complicated subject of air conditioning to simple terms which the public can easily understand. The picture shows goldfish living in a bowl of water squeezed from air saturated with humidity, canaries protected from a dust storm by a filter, and a graphic illustration of the heat given off by the body of the average human being.

Chicago Gets 13 Central Systems In January

CHICAGO—Thirteen central-plant air conditioning systems with a combined capacity of 258 hp. were sold in Chicago during January, according to figures compiled by Commonwealth Edison Co. This compared with 11 installations totaling 455 hp. reported for January, 1940.

Five of last month's cooling contracts were for general offices, two for industrial plants, and two for shoe stores. The remaining systems are to be installed in a restaurant, residence, clothing store, and radio studio.

In addition to these central-plant units, Chicago dealers sold four electric room coolers in January, as against five in the same month of 1940.

Air Cooled Bowling Alley To Have Summer League

GRAND JUNCTION, Colo.—Plans for a summer bowling league are already underway in the Grand Junction Bowling Lanes which have been equipped with an 11-ton air conditioning system.

Since the conditioning equipment was installed last August, there has been a noticeable increase in women customers.

The one-story structure, housing eight alleys, is equipped with a year-around air conditioning system.

Display Cases, Reach-In Cabinets, Walk-In Coolers and Beer Pre-Coolers. For almost half a century we are manufacturers of the highest quality commercial refrigerators. Compare with other higher priced lines. Write in for prices and discounts on the biggest money making line in the country. GENERAL REFRIGERATOR CO., 5th & Bainbridge Sts., Philadelphia, Pa.

DIRECT FACTORY Connection—Sell Refrigerator Display Cases, Walk-In Coolers, Reach-In Refrigerators, Refrigerating Units, to Meat Markets, Grocers, Taverns, etc. Financing arrangements to help sell. Write for full information, or see EHRICH REFRIGERATOR MFG. CO., St. Joseph, Mo., Dept. A.

BUSINESS OPPORTUNITIES

FOR SALE—Jobbing business established with own building and living quarters. Also extra rental. Only small overhead and low inventory necessary. Reason all health. Do not answer unless prepared financially. Box 1286, Air Conditioning & Refrigeration News.

SICKNESS compels sale of large clientele, long established refrigeration business. One of the best equipped shops in Southern California. 3 service men. Has income not dependent upon refrigeration service. Business all clear. Can also sell home close to business. Well worth investigating. Box 1313, Air Conditioning & Refrigeration News.

OWN A FILTER Cleaning Plant—Filter service pays big dividends when operated with heating and air conditioning business. Detailed engineering drawings of equipment, complete instructions for cleaning and reconditioning the various types of filters, and sources of supply. Price \$150.00. FILTER SUPPLY CO., 410 3rd Ave., S. E., Cedar Rapids, Iowa.

EQUIPMENT FOR SALE

ATTENTION refrigeration service repair companies—Phenomenal price reduction on brand new stainless steel domestic

controls. For further information inquire by mail to JAMES SURPLUS PARTS, 211 E. 149th St., Bronx, N. Y.

REPAIR SERVICE

MANUFACTURERS, Distributors—Attention: Our services available in New York, New Jersey, Connecticut. Specializing in installation and maintenance of low temperature applications including freezers, hardening rooms and cabinets, frosted food cabinets, and all related equipment. A reliable, capable, prompt-acting firm. J. M. WEINBERGER & CO., 32 Culver St., Yonkers, N. Y.

SAVE YOUR Trade-Ins—General Electric, Grunow, Westinghouse, Crosley, Servel, Gibson, Bohn Hermetic, etc. Complete Renovating Service, Respraying. Use our Ovens for Dehydrating. Compressors Rebuilt or Exchanged. Controls, Parts (The Hard ones to get). REFRIGERATOR SERVICE CORP., Minneapolis, Minn. Write for circular.

HERMETIC REBUILDING and Exchange Service General Electric—Westinghouse—Majestic and Grunow Units, Compressors and parts. Immediate shipment. Old unit can be returned later in our crate. We also exchange floats, Evaporators, Controls. Write for price list specify S6. SERVICE PARTS CO., 1101-03 N. 24th Ave., Melrose Park, Ill.

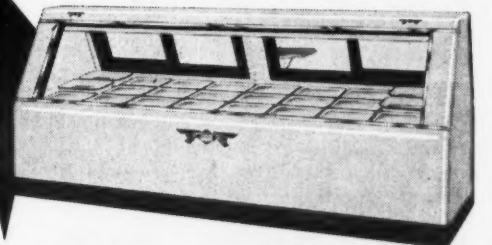
CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALELECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Prepare... FOR BIGGER PROFITS with Sherer...

Make sure of your share of 1941's extra business by selling Sherer—a complete line of display and storage refrigerators, backed by close factory cooperation. Write for franchise details.



SHERER-GILLET CO. • MARSHALL, MICHIGAN

AMINCO PURIFILTER

Removes moisture, dirt, acids, carbon & gum

Purifier contains cartridge of paper-thin discs of synthetic material, not affected by refrigerant. Liquid entering at inlet end flows around outside of cartridge. The liquid pressure plus capillary attraction between discs forces liquid through cartridge to outlet. All dirt, carbon, wax, and liquids with different specific gravity than refrigerant, such as acids and moisture, stays on outside of cartridge and settles to bottom of shell. Sizes from 1/4" to 3/4" S.A.E. and 3/4" to 1 1/2" solder.

AMERICAN INJECTOR COMPANY

1481-1491 FOURTEENTH AVENUE, DETROIT, MICH.

Pacific Coast: Van D. Clothier, 1015 E. 16th, Los Angeles, Calif.

Export: Borg-Warner International Corp., 310 S. Michigan Ave., Chicago, Ill.

Fan Blades and Blower Wheels

by

TORRINGTON

THE TORRINGTON MANUFACTURING CO. of TORRINGTON, CONNECTICUT

**MANY INSPECTIONS
MAKE STRAIGHT ARROW
THAT BRINGS IN
THE BUCKS!**

Only by making many inspections on every operation can we build compressors that are worthy of the name, CHIEFTAIN.

TECUMSEH PRODUCTS CO.
TECUMSEH, MICH.

**To Make a tight
connection that will
STAY tight**

**USE IMPERIAL TRIPLE
SEAL FITTINGS**

THE flare extrudes into groove making a leak proof joint even when seal has been badly nicked or marred.

Ask your jobber about Triple Seal Fittings

IMPERIAL BRASS MFG. CO.
565 S. Racine Ave., Chicago

IMPERIAL

VALVES • FITTINGS • TOOLS
CHARGING LINES • FLOATS
STRAINERS • DEHYDRATORS

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words, four cents each. Three consecutive insertions, \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

ARE YOU THE MAN? We want to contact a man used to substantial earnings. He is a persistent, enthusiastic worker. Has selling ability and established contacts with refrigeration and refrigerating equipment dealers and wholesalers in his territory. To such a man we offer a part or full time connection as Manufacturer's Representative (exclusive territory). Earning possibilities limited only by the man's energy and ability. For details write THE REOL CO., Hearst Tower Bldg., Baltimore, Md.

POSITIONS WANTED

SALESMAN, Commercial Refrigeration, excellent sales record—display cases, beer cooling, air conditioning, etc. Go anywhere, work alone or can handle salesmen. Capable closer. Box 1314, Air Conditioning & Refrigeration News.

FRANCHISES AVAILABLE

GENERAL Refrigerator Company is announcing the new 1941 line. General

Specify

CHARGED
DAVISON'S
IN SILICA GEL
WITH

DRYERS

THAT BEAR
THIS LABEL

Ask your Jobber

Use CHICAGO SEALS

for seal replacements

A complete line in all sizes

CHICAGO SEAL CO.
20 North Wacker Dr., Chicago

Specify ALCO

Engineered

**Refrigerant Controls for
Maximum Performance**

ALCO VALVE CO. ST. LOUIS, MO.

**COMMERCIAL
REFRIGERATORS**

World's most complete line
of commercial cabinets—
13 to 24 cu. ft. capacity.

MIDWEST
MFG. COMPANY • GALESBURG, ILL.

**FLOOR
TYPE UNIT COOLERS**

For the Larger Refrigerator

KRAMER-TRENTON CO.
TRENTON, N. J.

Carl Snyder Decries Price Appeal, Says Volume Can Be Misleading

SAN FRANCISCO — Conditioning his prophesy that 1941 would be the greatest year in the history of the household appliance industry with the warning that volume sales alone would not insure any retailer's participation in it, Carl M. Snyder, assistant manager of the appliance and merchandise department of the General Electric Co., laid particular stress on the refurbishing and more intelligent use of established merchandising tools in a recent address before the California Retail Hardware Association here.

First-month shipments of manufacturers are already in excess of the same period last year, the consumer follow-through is beginning, and buyers are showing an ever-increasing interest in the more deluxe items with higher selling prices, the speaker declared.

In reviewing electrical industry figures from 1929 through 1938, Mr. Snyder pointed out that cost reductions from 13 to 76% with radios, refrigerators, washers, fans, clocks, and ranges, have been effected.

"The figures are a reminder," Mr. Snyder said, "that rather substantial progress has been made in price reduction, in getting more goods to more people at less cost. But here is the sorry commentary. While we have been obtaining price reductions, with the attendant increase in volume, we are not gaining in our sales to the average family—\$59.95 in 1929, as compared to \$34.47 in 1938. Price alone is not the sinecure or salvation in this business."

Mr. Snyder suggested, as a corrective, more intelligent utilization of the old and familiar tools of selling—advertising, ensemble selling, display, sales training, and price maintenance, and stated:

"Too small a percentage of the

huge total spent on advertising is utilized in describing the benefits derived from our products. Too much of it assumes price is the only intriguing headline. We have forgotten that any industry must constantly remind its old and new customers of the benefits of its services in a simple and human way, so that it builds friendliness and appreciation of the product far beyond immediate material value.

"The broad theory of ensemble selling is particularly applicable to a new home," he said, "and that industry which first places its strength behind home building—the brightest spot on the new business horizon—will win the goodwill of millions of people."

With the constant lowering of prices and the shortening of gross margin dollars, the whole aspect of specialty selling has changed, Mr. Snyder continued, and the business has not been kept attractive to salespeople from the stand-points of earnings and training. This evil might have been prevented.

"But having eaten our cake," he said, "all of our activities in advertising, display, and promotion should be dedicated to building up volume, returning to the industry some of the lost dollars that have gone elsewhere in the last decade, so that our dollars of gross will again permit us to hire and train more people."

"There are still other good sales tools," he concluded. "The emphasis on rural electrification and its opportunities; constant guard over the mechanics of expense control; concern over inventories; fewer models in our product lines—these are but a few of the factors in organization planning that would provide the additional funds to carry on essential promotions."

Program Out ASRE Confer

(Concluded from Page 15)
chairman, has helped to plan the March sessions at Austin, Tex., in cooperation of other members in Texas and around the country. Other members of the committee are T. E. H. Nicholas, Mack Tuckey, and Stewart. The tentative program announced by Prof. Stewart for the following sessions:

March 13

1st Session—Quick

"Quick Freezing of Fruits and Vegetables," O. D. Dillingham, Berkeley, Calif.

"Quick Freezing of Meat Products," C. L. Daniels, National Refrigeration Co., New Orleans.

"Freezing of Citrus Juices," J. L. Heid, Champaign, Ill., Department of Agriculture.

"An Immersion Type Freezing System and Its Application," Luis H. Bartlett and Research Assistants, Texas A. & M. University, College of Texas.

2nd Session—Dairy

"The Dairy Industry and Refrigeration," Prof. C. N. Shephardson, Department of Dairy Husbandry, Texas A. & M. University, College of Texas.

"Refrigeration Requirements for Meat Processing and Marketing," J. L. Heid, Department of Agriculture, Texas A. & M. University, College of Texas.

"The Freezing and Storage of Cream for Use in

Court Ruling Backs Distributor's Rights

(Concluded from Page 1, Column 5)
contract between the two parties precluded any recovery by the firm. Reversal of this ruling by the supreme court holds in effect that the Meiklejohn firm is entitled to this judgment.

Judge C. F. Van Pelt ruled against Meiklejohn, holding that the counter claim should have charged fraud. Hearing evidence on the amended counter claim, Judge Henry P. Lockney ruled that fraud had been committed, but denied any award.

Judge Lockney ruled that the Morse company had been guilty of false representation in assuring the distributor that the territory assigned was "virgin," and that no arrangements had been made for distribution of the stoker line in the territory by other channels. In fact, the court said, the New York firm had arranged for the sale of a "substantially identical" stoker through a mail-order house.

The lower court set Meiklejohn's damages at \$6,322.67 for sums spent in promoting the business, and at \$1,000 for injury to the firm's business and goodwill, but ruled that a written contract between the manufacturer and distributor precluded any recovery by the Meiklejohn firm.

Bassett & Rodgers Get Wolverine Promotions

DETROIT—Promotion of H. Y. Bassett to the position of superintendent of tube manufacture, and J. S. Rodgers to head of the technical department, in charge of laboratories and mill control, has been announced by Wolverine Tube Co.

Chieftain Central Sales Opens New Quarters

INDIANAPOLIS — Opening of offices and salesrooms of Chieftain Central Sales Co., handling Tecumseh and Kenmore products lines in Indiana, Michigan, Ohio, Kentucky, and West Virginia, was held here Feb. 25 in conjunction with a meeting of local Refrigeration Service Engineers Society. Headquarters of the company are at 1527 Madison Ave.

Product display was open all day, with C. M. Brown and Larry Larsen of Tecumseh Products and Lawrence Smith of Kenmore on hand to explain the respective lines to jobbers, service men, and other guests. Movies of the Tecumseh production and inspection departments were shown, as were motion pictures taken at the recent All-Industry Show. Refreshments, music, and dancing wound up the formal program, which began at 8 p.m.

Chieftain Central Sales Co. is under the management of Al Brandlein.

Display of 'Local Angle' Gets Real Sales Results

NEWARK, Ohio—Window display devoted to the product of a local industry—Fiberglas—sold 21 refrigerators in the first week for the John J. Carroll store here, seven to employees of Owens-Corning Corp., maker of Fiberglas.

Glass marbles, from which Fiberglas textile products are made, carpeted the floor of the display. The window told the insulation story for Westinghouse appliances, with cards explaining how the glass is drawn into the final product. Considerable newspaper publicity on the display was received.

ACCURACY

You get it in WOLVERINE TUBING

—Buy From Your Jobber—



WOLVERINE TUBE CO. DETROIT

AUTOMAT

2450 NORTH

MILWAUKEE

Export Depart

17

Program Outlined For University of Texas Conference Meeting March 13 & 14

(Continued from Page 1, Column 2)
an, has helped to arrange the sessions at Austin, with the participation of other refrigeration engineers in Texas and adjacent states. Members of the A.S.R.E. committee are T. E. Hinton, J. E. As, Mack Tucker, and F. C. t. The tentative program presented by Prof. Short includes the following sessions and speakers:

March 13

Session—Quick Freezing
"Quick Freezing of Ice Cream,"
Dillingham, Banner Cream-

Quick Freezing of Sea Foods,"
Daniels, National Sea Foods
New Orleans.

Freezing of Citrus Fruits and
J. L. Heid, Chemist, Depart-
ment of Agriculture.

Immersion Type Quick Freez-
ing System and Its Application,"
Bartlett and H. E. Brown,
Research Assistants, The University
of Texas.

Session—Dairy Industry
"Dairy Industry in Texas,"
C. N. Shepardson, Head, De-
partment of Dairy Husbandry, A & M
University of Texas.

Refrigeration Requirements in the
Marketing and Marketing of Milk
and Milk Products," Prof. K. M.
Head, Department of Dairy
Engineering, Texas Tech. College.
Freezing and Storage of
Ice Cream for Use in Ice Cream

Making," Prof. M. G. Pederson,
Texas Tech. College.

"Refrigeration Equipment in Milk
Production," H. O. Roberts, Jr.,
Central Power & Light Co., Corpus
Christi.

"Design and Application of Re-
frigerating Equipment for the Dairy
Industry," I. A. Mahon, The Cream-
ery Package Mfg. Co.

3rd Session—Dinner Meeting

"Early History of Refrigeration in
Texas," Charles Zilker, San Antonio.
"Refrigeration Progress in Texas,"
L. P. Reiss, Marshall.

"History of Refrigeration in the
South," W. A. Taylor, New Orleans.

March 14

4th Session—

Locker Storage—Symposium
"What Texas Citizens Want to
Know about Locker Storage," W. L.
McGill.

"Fitting the Locker Storage Plant
to the Community," Capt. Bernard
Gussett, San Antonio Public Service.

"Locker Storage for Farms,"
P. T. Montfort, Agricultural Engi-
neering Department, Texas A & M
College.

"Urban Locker Plants," J. W.
Stockham, Refrigerating Engineer,
Dallas Power & Light Co.

"Locker Storage Uses by the
Home-Maker," Miss Neeley, Exten-
sion Service, Texas A & M.

"Equipment Servicing in Locker
Plants," A. F. Ramsey, York Ice
Machinery Corp.

5th Session

"Sanitation and the Bacteriological
Examination of Frozen Foods,"
N. H. Sanderson, Frosted Foods Co.,
Brownsville.

"Specific Heats of Foodstuffs,"
Byron Short, University of Texas.


The program and arrangements
committee includes V. L. Doughtie,
The University of Texas; P. T.
Montfort, Texas A & M College;
Dr. J. L. Heid, U. S. Fruits and
Vegetable Laboratory, Weslaco; L. H.
Bartlett, The University of Texas;
K. M. Renner, Texas Tech. College;
W. R. Woolrich, The University of
Texas; Jennie Wilmet, The Univer-
sity of Texas; M. L. Brown, Dallas
Air Conditioning Co.; Prof. Short.

Cork Supply Called Adequate For Needs

(Continued from Page 1, Column 4)
the preceding 10 years, he said.
Prior to the war considerable quan-
tity of cork was carried by Italian
shipping, but now has been taken
over by smaller nations. War has
cut off only one source of supply—
Algiers.

Supplies and imports of pseudo-
cork and cork substitutes are also
sufficient, Mr. Faubel assured the
engineers.


Cork's use as low temperature
insulation, as gasket material for
engines, and as plugs for retaining
the powder within cartridge cases of
ammunition for certain size guns was
given as reason for its classification
as a "critical material."



DEPENDABLE

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BODIES GET
17 DIFFERENT CHECKS
before **ASSEMBLY**

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 2450 NORTH THIRTY — SECOND STREET
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*A-P Water Regulating Valve controls flow of water for water-cooled compressors and condensing coils.

Progressive Service Engineers
 Use and Recommend — and
 Aggressive Jobbers Stock and
 Talk **Products.**